

# The Plough, the Loom, and the Anvil.

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## THE HARMONY OF INTERESTS:

AGRICULTURAL, MANUFACTURING, AND COMMERCIAL.

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### CHAPTER FOURTH.

#### HOW PROTECTION TENDS TO INCREASE PRODUCTION AND CONSUMPTION.

Two systems are before the world: on the one hand, that which is denominated protection, and on the other that which is denominated free-trade. Each claims to be the one under which the labourer receives the largest reward for his exertions, and it is for the purpose of testing the validity of those claims that I have given the numerous tables contained in the last chapter, by aid of which I now propose to examine this question in its bearings on the various portions of society. It is the great one for the Union, for *in it are included all others*. The discord now existing between the North and the South has its origin in the diminished value of the returns to slave labour. If it can be shown that by one and the same system the interests of the North and the South, the free and the enslaved, can be promoted, harmony may take the place of discord. The differences in regard to internal improvements by aid of the general government have their origin in a necessity for scattering ourselves prematurely over large surfaces. If it can be shown that by one and the same system the North, the South, the East, and the West, can be enriched, and all enabled to make roads for themselves, harmony may be restored. The discords so frequently existing between the employer and the employed, the capitalist and the labourer, the banker and his customers, may all, as I think, be traced to one and the same cause, and if that can be removed, harmony and good feeling may be restored and maintained. Every question affecting the peace and tranquillity of the Union, or the people of the Union, will be settled whenever we shall have determined for ourselves the one great question—"Which is the system under which the labourer obtains the largest reward for his labour?" When that shall come to be done, it will be seen that there is a perfect harmony of interests throughout the Union, and among all its people.

Before proceeding further, I would urge upon the reader a careful examination of those tables, bearing always in mind the precise position of the question that is to be discussed. It is *admitted* by all that protection tends to increase the domestic production of the commodity protected. That, therefore, does not require to be proved. It is *asserted* that protection tends to raise the price of the protected article and to diminish the power of consuming it, whereas the removal of protection diminishes its cost and increases the power of consumption. That is denied, and *that it is which requires to be proved*. If this assertion be true, then the power of consumption must diminish with protection. We see, however, that the consumption of iron, of coal, of cotton, and of wool, increased with great rapidity in the years between 1830 and 1834, and in those from 1843 to 1847. If it be true, the quantity of men and things passing on the roads and canals, and the number of exchanges to be performed in our cities, should diminish with protection,

whereas they increased with great rapidity in both of the above-named periods. If it be true, then it must reduce the wages of labour, and thus diminish the inducements for foreigners to come among us and occupy our vacant lands, whereas immigration increased with great rapidity under both protective tariffs. If it be true, then it must diminish our power to trade with foreign nations, and the inducements to build ships, whereas shipping grew with great rapidity in both those periods.

If, now, we examine the period between 1834 and 1843, it is impossible to avoid being struck with the fact that the power to consume foreign products not only did not increase as domestic production diminished with the approach to free trade, but that it was actually less in quantity than under the system of protection. The building of furnaces and rolling-mills was stopped, yet we consumed less foreign iron than before. So was it with cotton goods, the import of which fell from above *fifty* millions of yards down to *eight* millions. We killed off our sheep, but the importation of foreign cloth diminished. We prevented increase in the domestic consumption of cotton, but shipping did not grow with the increased necessity for depending on foreign markets. We adopted a course that we were assured would raise the wages of labour, but immigration ceased to grow. So is it now. The building of cotton-mills is stopped, but our whole import of last year, in which we incurred a debt of twenty-two millions, but little exceeded a pound per head. We have closed furnaces and rolling-mills, but we consume far less iron than before. We have abolished the system that was regarded as "a war upon labour and capital," yet immigration is diminishing and there is no demand for capital. Steam-engines are idle, and there is no demand for new ones, except for a few steam-vessels. Railroad tolls are diminishing, and steam-boats on the Western waters are idle. Iron is low in price, but it is not wanted. So is coal. So are cottons and woollens. So is almost every description of merchandise. The power of consumption is diminishing, because the demand for labour and capital has largely diminished.

The power of the people to pay taxes for the support of government is dependent upon their power to consume commodities that are taxed, and if protection diminished wages, it must of course diminish revenue; but when we examine the facts, it is shown that, notwithstanding a great increase of the free-list, the revenue increased under the tariff of 1828, and fell off so much afterwards that the government was compelled almost to beg for loans in the markets of Europe. With the tariff of 1842 it grew rapidly, but with that of 1846 it is diminishing in actual amount per head, notwithstanding the purchase of more than twenty millions of goods on credit in a single year. If that debt were now called for, the revenue of the current year would not exceed that of 1842.

The question to be settled is—"Does the power to import grow with the diminution in the power to produce that follows the withdrawal of protection?" If it does, the facts must prove it. There is no question that the power to produce iron and cloth grows with protection. That is, as I have already said, admitted by all. Were it not, the facts prove it. The burden of proof lies, then, with the opponents of protection. To establish their system they must show that the power of production and consumption grows now as it grew three years since, and that it grew from 1835 to 1843 as it grew from 1830 to 1834.

The first thing that must strike all who examine the tables given in my last is the universally diminutive amount of foreign products received in exchange for the vast bulk of cotton, grain, provisions, &c., sent to foreign countries. Thus in 1842-'43 the import of cotton cloth was much less than a yard per head of the population, and less probably than one-fourth of a

pound of cotton. In other years we see that it has varied from two to four yards, but in no single year has our consumption of cotton that has passed through foreign looms materially exceeded a pound per head.

The returns from Europe received for all our products may be summed up nearly as follows: fifty cents' worth of iron, half a pound of wool, about as much flax, one or two ounces of silk, and China and earthenware equivalent to a tolerable cup and saucer, to which may be added the *twisting and weaving* of a pound and a half of cotton, per head. To obtain all this we give a large portion of the land and labour of the cotton-growing States, and of those employed in raising tobacco and rice, together with as much food as would feed men, women, and children who could twist and weave five times the cotton, wool, silk, and flax we import, and the use of more capital in horses, wagons, railroads, engines and cars, steam and canal boats, ships, wharves and warehouses, than would be necessary for machinery to convert all our cotton into cloth, and make more iron than has ever been made in Britain, and almost as much labour as would do the work—and *withal, we are brought in debt*. It is certainly using great means for the accomplishment of small ends.

Every portion of the tables tends to prove that while the amount of foreign commodities received in payment for our exports increased in the period from 1829 to 1834, it diminished in that from 1835 to 1841—still further diminished in the years 1842 and 1843, and then rose rapidly from 1844 to 1847, since which time it has declined. These facts seem to warrant the conclusion that the ability to consume foreign products, by both labourer and capitalist, increased under the two tariffs of protection, and declined with every approach to free trade. If, now, we desire to understand how such should be the case, it may be useful to examine how it is with individuals, and, doing so, we shall find that the man who produces most largely of the articles of prime necessity is always the one who can indulge most freely in the luxuries of life; and *vice versa*, that the farmer who obtains from his land the least food, is the one who can least indulge in clothing, coffee, tea, or books.

What is further to be remarked is, that any material increase in the consumption of foreign products, consequent upon the approach to freedom of trade, has appeared to be followed by exhaustion and bankruptcy, while every increase in production at home, consequent upon protection, has been but the preparation for a new and larger increase—sometimes so great as to cause a feeling of apprehension that it was unnatural, and could not be maintained. To what extent this could be carried has never been ascertained, for the only two periods of perfect protection have each been limited to four years. To understand the cause of this, it would be well for the inquirer to examine for himself the facts that become obvious to sight, whenever and wherever a factory or furnace has recently been set in operation. Those presented at Graniteville, S. C., are thus described by a highly intelligent correspondent of "The New York Herald:"—

"The effect of the erection of this manufactory in the neighbourhood is almost magical. Hundreds have found employment among the poor of the white inhabitants, who were, before, almost destitute. A Methodist and a Baptist church have been erected. A free school has been opened, and about 70 pupils attend. There is a large and convenient hotel, where I am writing this letter. The town is laid out in streets, and already over 80 dwelling-houses, very neat and comfortable, with gardens attached, have been put up, which rent from \$16 to \$25 per annum. The girls in the factory are, some of them, very pretty, and are well dressed; and, from what I can learn, the change in their appearance is extraordinary. The superintendent, Mr. George Kelly, who came out here and placed the factory in operation, went with me through the manufactory and town. He informed me that he only brought with him four or five experienced persons from the



North—all the rest in the factory, about 300, men, women, and children, are from the Sand Hills and immediate vicinity, where they, one year ago, were earning nothing. They make now from four to five dollars, (males,) females from three to four dollars, and children one to two dollars per week. Some of the girls, who are now well dressed and appear very intelligent, a year ago were at work in the field, hoeing corn, or ploughing with a horse; others were idle; now they reside in comfortable boarding-houses, where they pay \$1.50 per week for board, and can lay up money. Their education is attended to, and they are on the road to become useful and productive citizens. In fact, since Christmas, over forty marriages have taken place between the young male and female operatives in the factory. They were brought together in it, became attached, and got married. In such a case, the wife generally leaves the factory to attend to the house-keeping arrangements of the new couple, and the husband continues in the factory, which gives them an independent support.

"The grounds around the factory are laid out with a great deal of taste, and I have not seen, in a long while, a more prosperous and thriving place. New houses are going up every week. The applications for work are double what they can possibly employ. They could obtain, in the district, 400 male and female operators, who are without any work, if they could give them employment."

The following account by Mr. Bryant, Editor of "The Evening Post," is descriptive of facts presented by a mill recently erected in Barnwell District, S. C.:—

"The girls of various ages, who are employed at the spindles, had, for the most part, a sallow, sickly complexion, and in many of their faces I remarked that look of mingled distrust and dejection which often accompanies the condition of extreme, hopeless poverty. 'These poor girls,' said one of our party, 'think themselves extremely fortunate to be employed here, and accept work gladly. They come from the most barren parts of Carolina and Georgia, where their families live wretchedly, for hitherto there has been no manual occupation provided for them, from which they do not shrink as disgraceful, on account of its being the occupation of slaves. In these factories, negroes are not employed as operatives, and this gives the calling of the factory girl a certain dignity. You would be surprised to see the change which a short time effects in these poor people. They come bare-footed, dirty, and in rags; they are scoured, put into shoes and stockings, set at work, and sent regularly to Sunday-school, where they are taught what none of them have been taught before—to read and write. In a short time, they become expert at their work; they lose their sullen shyness, and their physiognomy becomes comparatively open and cheerful. Their families are relieved from the temptations to theft and other shameful courses which accompany the condition of poverty without occupation.'"

He adds that "at Graniteville, in South Carolina, about ten miles from the Savannah river, a little manufacturing village has lately been built up, where the families of the *crackers*, as they are called, reclaimed from their idle lives in the woods, are settled and white labour only is employed. The enterprise is said to be in a most prosperous condition."

"The buildings are erected here more cheaply," he continued; "there is far less expense in fuel, and the wages of the work-people are less. At first, the boys and girls of the 'cracker' families were engaged for little more than their board; their wages are now better, but they are still low. I am about to go to the North, and I shall do my best to persuade some of my friends, who have been almost ruined by this Southern competition, to come to Augusta and set up cotton mills."

The labour employed in building these mills was clear profit. The men and their families were there, and they had to be supported by somebody, whether they worked or not. All the labour employed in working the mills is profit. The people have begun to produce. From unproductive consumers they have become productive consumers. In their former condition they could consume scarcely any clothing, or utensils requiring iron for their manufacture, or furniture, or books, or newspapers—scarcely any thing, indeed, but food. Having become productive, *the whole surplus* may go to the purchase of other things than food, and thus is made a market for cloth and iron and other commodities, that before had no existence. *Every producer is a consumer to the whole extent of his production*, and by enabling these poor people to produce more, the planter



makes a market on the land for the products of the land, to the extent of the whole excess of production. The more that is produced, the more *must* be consumed.

This assertion may at first appear to be one of doubtful truth, yet a little examination will, I think, suffice to establish its perfect correctness. The man who earns six dollars a week, lays by one of them, which he carries to the saving-fund, which lends it and other similar dollars to some one who desires to build a house. He pays it out to workmen who purchase with it food and clothing, and thus is that surplus dollar consumed. The capitalist, with his savings, builds houses, or ships, or factories, and the workmen whom he employs purchase food and clothing, and the use of houses, with his money. The average consumption of a year always is *and must be* equal to the average production, and if we desire to know the extent of the one we have but to ascertain that of the other.

In 1839 we imported forty-three millions of yards of cotton cloths of various kinds, the consumers of which were customers to the planter to the extent of eleven millions of pounds of cotton, or less than 28,000 bales, being as much as would be worked up by twenty-eight mills of moderate size, or fourteen of larger size. To produce those mills in any single cotton-growing State would require no effort whatsoever, and when produced it would be found that they would be all profit, for it would be attended with not the slightest diminution in the amount of agricultural production. The labourers are there, and a large portion of their time is absolutely waste. The horses and wagons are there, to a great extent unemployed. The timber is there, encumbering the best lands of the plantation. The men and the horses must be fed, and the wagons must be kept in order. Make a market for this waste labour, and the labourers will consume more food, but the chief increase of expenditures will be in clothing, thus making a market for cotton—in houses, making a market for stone and lumber—in furniture, for which lumber will be required—in books and newspapers, making a market for rags—and the cloth-makers, and carpenters, and masons, and cabinet-makers, and paper-makers, and printers, will want cloth, and shoes, and houses, making a further market for cotton and leather, and lumber and stone. Exchanging thus on the spot, each and every man would be a producer, whereas when exchanges are made at great distances, the transporters and exchangers are more numerous than the producers, and as consumption *must* go to the extent of production, and *can* go no further, we may now see why it is that consumption tends to increase so rapidly when men work in combination with each other.

In four years we erected mills that worked up 300,000 bales of cotton, or eleven times as much as was contained in all the cloth imported in 1839. To have created treble that number would have required no effort, nor would it have been attended with any loss of agricultural products, for the labour was being wasted in every county of the South and West: and to carry them on would now be attended with no diminution in the product of food or cotton, for treble the labour required for a factory is now being wasted in almost every county of the Union, and in *every one* south of New England. To the labour-power of men and horses, and women and children, now absolutely unemployed, let us add the quantity that is wasted on the road, and to that let us add the manure now wasted on the road, and then we may form an estimate, but even then a very insufficient one, of the increased product that would have resulted from the creation of those mills. Let us then reflect that all these people are now fed, and that their surplus earnings would be applicable to the purchase of other things than food, and we may then see what would be the extent of the market thus made on the land for the products of the land.

A great error exists in the impression now very commonly entertained in regard to national division of labour, and which owes its origin to the English school of political economists, whose system is throughout based upon the idea of making England "the workshop of the world," than which nothing could be less natural. By that school it is taught that some nations are fitted for manufactures and others for the labours of agriculture, and that the latter are largely benefited by being compelled to employ themselves in the one pursuit, making all their exchanges at a distance, thus contributing their share to the maintenance of the system of "ships, colonies, and commerce." The whole basis of their system is *conversion* and *exchange*, and not production, yet neither makes any addition to the amount of things to be exchanged. It is the great boast of their system that the exchangers are so numerous and the producers so few,\* and the more rapid the increase in the proportion which the former bear to the latter, the more rapid is supposed to be the advance towards perfect prosperity. Converters and exchangers, however, must live, and they must live out of the labour of others: and if three, five, or ten persons are to live on the product of one, it must follow that all will obtain but a small allowance of the necessities or comforts of life, as is seen to be the case. The agricultural labourer of England often receives but eight shillings a week, being the price of a bushel and a half of wheat.

Were it asserted that some nations were fitted to be growers of wheat and others grinders of it, or that some were fitted for cutting down trees and others for sawing them into lumber, it would be regarded as the height of absurdity, yet it would not be more absurd than that which is daily asserted in regard to the conversion of cotton into cloth, and implicitly believed by tens of thousands even of our countrymen. The loom is as appropriate and necessary an aid to the labours of the planter as is the grist-mill to those of the farmer. The furnace is as necessary and as appropriate an aid to the labours of both planter and farmer as is the saw-mill, and those who are compelled to dispense with the proximity of the producer of iron, labour to as much disadvantage as do those who are unable to obtain the aid of the saw-mill and the miller. The loom and the anvil are, like the plough and the harrow, but small machines, naturally attracted by the great machine, the earth, and when so attracted all work together in harmony, and men become rich, and prosperous, and happy. When, on the contrary, from any disturbing cause, the attraction is in the opposite direction, and the small machines are enabled to compel the products of the great machine to follow them, the land invariably becomes poor, and men become poor and miserable, as is the case with Ireland.

To those who doubt the extent of the loss resulting from this unnatural division of labour, I would recommend a visit to any farm at a distance of thirty or forty miles from a furnace or a factory, that they may there, on the ground, satisfy themselves of the fact. They will there see days perpetually wasted for want of means of occupation—and other days on the road carrying to market small amounts of produce—and general listlessness resulting from the want of stimulus to activity, on the part of the men, while children, male and female, are totally unemployed, and the schoolmaster remains abroad for want of means to pay him when at home. As a general rule,

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\* "Out of 3,400,000 families in Great Britain in 1831, but 960,000 were engaged in agriculture, the work of production. Between 1831 and 1841 the number of adult males increased 630,000, but the number of those employed in agriculture diminished 19,000. The town population, that which lives by the work of conversion and exchange, is steadily increasing in its ratio to the producing population, and as a necessary consequence there is a steady increase of poverty, vice, and crime."

our farmers attach scarcely any value to time. They go to a distant market in preference to selling at a nearer one, when the difference of price to be obtained upon their few pounds of butter, or baskets of vegetables, appears utterly insignificant compared with the loss of time and labour, and they do this because labour is to so great an extent totally valueless. Let the inquirer look to these things for himself, and let him then add the enormous proportion of the labour that is misemployed in badly cultivating large surfaces instead of small ones—in keeping up fences and roads entirely disproportioned to the product of the land—and finally let him add the waste of intellect from the want of proper instruction and frequent communication with their neighbour men—and then let him determine if the loss is not *five times over* as great as would pay for all the cloth and iron—raw material included—consumed upon the farm. Place the mill there, and all this is saved. The farmer and his horses and wagon are employed in hauling stone and timber for the mill and for houses, and his children find employment in the mill, or in the production of things that can be used by those who work in the mill, and *all* their extra earnings may go for cloth and iron, *for food they had before*. I say all, for with the mill come improved roads, and the facility of sending to market the many things for which a market on the land cannot as yet be made.

The mill and furnace, and the coal mine, are saving-funds, in which the people of the neighbourhood deposit the labour and the things which otherwise would be waste, and where these depositories exist, farmers and planters become rich. Where they do not, they remain poor. To those who desire to understand the wonderful effect of the daily deposit of small quantities of labour, I would recommend an examination of the saving-fund system of Europe and this country. They will there see how much can be accumulated from small savings when a safe place of deposit is offered, and thence can form a judgment of how much is liable to be wasted for want of such institutions. The people of New England have saving-funds in which they deposit what would be otherwise the waste labour of themselves, their horses and wagons, their sons and their daughters, and much of the produce that would otherwise be wasted, making by the very act a market on the land for the products of the land, and thus are enabled to save the manure, and they grow rich because of these economies. The people of other States waste labour, and water-power, and produce of various kinds, and then they destroy their timber for want of a market for it, and they waste their manure, and thus it is that they remain poor because of this extravagance. One cent per day for each person of the nation is almost eighty millions of dollars in a year. Is there not wasted, for want of a demand for it, labour to quintuple that sum per head? If so, the amount is four hundred millions of dollars, or forty times the price—raw material included—of all the cotton cloths we can afford to buy from abroad.

Were all this saved, it would make a market for four hundred millions of dollars of cottons and woollens, of linens, iron, hardware, agricultural implements, coal, and all of the thousand other things required for the comfort and enjoyment of life. I say four hundred millions of those things, for food they had before, and as they are all consumers to the whole extent of their production, they must expend almost the whole extra production in other things than food. To the extent of these four hundred millions they would be customers to the land and its owner, for the earth is the sole producer.

Should the inquirer desire to view the effect of this waste of labour, on a large scale, he could not now do better than visit the valley of the Schuylkill. Doing so, he would find there all the labour and all the machine-power requisite for the production at market of 60,000 tons of coal per week,



worth about \$240,000. The quantity that will go to market this year will be about 30,000 tons per week, worth \$120,000. Here is a diminution in the article of coal alone, to the extent of six millions of dollars, and if we were to add the loss from iron it would increase greatly the amount. Having ascertained this, if he should then inquire what was being produced to make amends for this, he would find it literally nothing. The men are there, and their wives and families are there, and they must have food, and that they may obtain it hundreds and thousands are cultivating potato patches; but the whole value produced to take the place of the coal and iron not produced, is so small as scarcely to be worth the slightest notice.

The labour-power now being wasted in that valley is more than would pay for all the iron and coal we have imported, and for which we have to pay in wheat or cotton. If, now, we follow this six millions, we can find it everywhere diminishing the power of the labourer and the miner to consume food or cloth, to the loss of both farmer and planter—diminishing the demand for the labour, and consequently the reward of the labourer and of the mechanic—diminishing the power of railroad owners to construct new roads, and thus again diminishing the demand for labour, and the power to pay for cloth or food: and thus may it be traced, step by step, throughout the whole nation, every interest taking its share of the loss.

Let the inquirer next visit a factory of any kind, and he will see that the whole value of the labour there employed is a creation that owes its existence to the fact that the mill has been built to be a saving-fund in which each family may deposit the labour, physical and mental, that would otherwise be wasted, receiving in exchange the cloth, the hats and coats, the shoes and stockings, the books and newspapers, that could not otherwise have been obtained. Let him then trace these savings, and he will find them producing an increased demand for food—and better food—a demand for cotton, and wool, and iron, and fuel, and all other of the products of the earth, to the benefit of every owner or cultivator of land, whether farmer or planter.

The people of New England save labour, and doing so they grow rich, and are enabled to make roads by which they travel rapidly to market, and they save the refuse of their products, which goes back upon the land, and that also grows rich. The people of the South and West, for want of such labour-saving-funds, waste more time than would pay *many times over* for all the cloth and iron they can consume; and then they are unable to make roads, the consequence of which is that the conveyance to market is costly. They have to go to a distance for the performance of every exchange, however small. Their *necessities* for making roads are great, but their *power* to make roads is small. They waste all the refuse of their land, which is exhausted, and then they run away to other lands, *increasing their necessities and diminishing their power*.

But, it is asked, cannot too much coal and iron, cotton, wheat, and other of the good things of the world be produced—more than can be consumed? Those who ask this question do not recollect that every man is a consumer to the whole extent of his production. The more coal and iron are produced, the more wheat and cotton are consumed. The more wheat and cotton are produced, the more coal and iron are consumed. Consumption and production go hand in hand, and when there is a glut of any thing it is the result of error in the system that requires to be corrected.

Coal is now superabundant. The market is overloaded with a quantity smaller than that which was readily consumed two years since, and less by one-third than would be now required, had the power of consumption increased at the same rate as during the period from 1843 to 1847. The friends of the existing system point to the trivial import of foreign coal, and

say that the cause of diminished product cannot there be found. They are right, but in so saying they condemn the system. The duty on coal was reduced in order that the labourer might obtain fuel more readily, but it has become so much more difficult to procure it that the consumption is already sensibly diminished, with every prospect of a further diminution. The total import of iron, and of cotton cloth, is as nothing compared with the growth of the product in the years from 1843 to 1847, and thus we see that the supply diminishes instead of increasing in its ratio to population, under a system that was to enable the labourer, and the farmer and planter, more readily to obtain cloth and iron.

It is not so much that coal needs protection for itself—or that iron or cotton need it for themselves—but that each needs it for the other. The producer of coal suffers because the furnace is closed, and the producer of iron suffers because the factories are no longer built, and the maker of cloth suffers because labour is everywhere being wasted, and the power to buy cloth is diminished. The harmony of interests—agricultural and manufacturing—is as perfect as is that of the movements of a watch, and no one can suffer without producing injury among all around. The grower of cotton suffers when the operatives in cotton factories and the workers in mines and furnaces are unemployed, and the latter suffer when adverse circumstances diminish the return to the labour of the farmer and planter.

There are more labour and the products of labour wasted in the States south of Mason and Dixon's line, than would, *ten times over*, convert into cloth all the cotton they produce, and more in the States north of it, than would, *ten times over*, produce all the iron made in Great Britain. This may appear a large statement, yet it is less than the truth, as will be clearly seen on examination. If evidence of this be desired, look to the fact that the manufacture of cottons and woollens doubled in five years—and that of iron, which in 1843 was under 250,000 tons, reached nearly 800,000 in 1847. Did this diminish the products of agriculture? Was not, on the contrary, the supply greater than was ever before known? We added at least two hundred millions in manufactures, not only without diminution elsewhere, but with a larger increase than had ever before taken place, and it was precisely when the home consumption had become so immense that the assertion was made that we had three hundred millions of bushels of food for which we needed a market. All this labour was saved labour, and much of the things employed would otherwise have been wasted.

Look next to the other fact, that it was *precisely when the growth of manufactures was arrested*, from 1835 to 1839, that the supply of food became so short that, notwithstanding diminished consumption consequent upon high prices, we were compelled to import wheat to the amount of more than four millions of dollars in a single year, and it will be seen if the experience of the two periods—1835-'41, and 1844-'47—does not prove conclusively that the nearer the loom and the anvil are brought to the plough, the larger is the return to the labours of the ploughman. Could it be otherwise? The nearer the place of exchange, the less of labour and manure are wasted on the road, and the more uninterruptedly is labour applied, upon a machine constantly increasing in its powers. The demand for lumber enables the farmer to sell his trees, and with the product he drains his land, and thus is enabled to cultivate more and better land. The more distant the loom and the anvil, the more labour and manure are wasted on the road, the less of both can be given to the land, and the best lands necessarily remain encumbered with trees that are valueless, because the labour of clearing them is more than they are worth when cleared.

That the reward of the labourer advances under the protective system is  
VOL. II.—59

obvious from the fact that immigration increases. Men go from low wages to seek high ones. From 1829 to 1834 immigration grew. Thence to 1843 it was almost stationary. Thence to the present time it has increased with vast rapidity. Henceforward, if the existing system be maintained, it must diminish, for the power to obtain food and clothing, fuel and house-room, wages, has declined.

That the productiveness of labour increases is obvious from the rapid growth of canal and railroad tolls, and their stationary condition with every approach to the policy that tends to the separation of the loom and the anvil from the plough and the harrow. So again with the growth of steamboats, and of vessels generally. The more there is produced, the more can be consumed, and the more will go to market.

There is, as it appears to me, no single point of view from which we regard the facts now passing before our eyes, in which we shall not find confirmation of the correctness of these views. Were all the machinery now used in Lowell and Providence, for the manufacture of coarse cloths, taken out and replaced by that fitted for making fine cloths, and muslins, and silks, the product would be ten times as much as we now import, with little increase in the quantity of labour employed. Were all that coarse machinery then distributed throughout the South, it would enable the people of Southern States to convert into cloth three hundred thousand additional bales of cotton, not only without diminution in the agricultural export, but with an increase, for labour would then be more advantageously applied. To accomplish all this, by building mills and making machinery, would require an amount of labour equal to but a very small portion of that which is now wasted in a single year, and *not as much as is this year wasted in Pennsylvania alone.*

The people of the North would then have called into action a higher degree of intellect than is now required, and wages would rise, and the consumption of woollen and cotton cloth, of silks, and of sugar, and tea, and coffee, would grow rapidly. The people of the South would find the same effects. Their own consumption of cotton would be quintupled, while they would consume more and better food than now. They would need better houses, and the demand for timber and stone would clear their land, and wealth and population would give them better roads, and the men who came to make roads would eat food and wear coarse cottons, and thus the planters themselves would be enabled to become large customers for the fine ones produced in the North.

Consuming more tea and coffee, the producers of those articles would be able to purchase more cotton, and thus the planters' market would grow on every hand. The demand for machinery, for furniture, and for thousands of other things, would produce new improvements in manufactures, and the producers of tea and coffee, sugar and cotton, would be enabled to consume more largely of them, while the makers of machinery and furniture would need more iron, more lumber, and more cotton.\*

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\* I take the following from *The Cincinnati Gazette*, as evidence of the vast amount of smaller articles, composed of things that would be wasted, and prepared, much of it, by labour that would be wasted but for the proximity of a market :—

“What our larger manufactures for the South are, is well understood, especially by persons familiar with the machinery of sugar plantations. Our small manufactures, consisting of bagging, buckets, tubs, ploughs, &c., are less known. The exports of some of these for four seasons, will serve to show both the requirements of the South in this respect, and our ability to supply them.



On the other hand, let us suppose the cotton mills closed, and the supply of cloth diminished to the extent of all that is produced from 600,000 bales of cotton—the furnaces closed, and the supply of iron diminished to the extent of 800,000 tons—and the coal mines closed, and the supply of fuel diminished to the extent of three millions of tons—could we import and pay for the deficiency? Would the whole cotton crop then bring more than we now obtain for three-fourths of it? It would not. Our power to import foreign cloth and iron, and fuel, would not only not be increased, but *it would be diminished*, and we should consume one pound of cotton per head instead of ten or twelve. The power to pay for all the cotton and iron produced at home, results from the saving of labour, and with the disappearance of the power to save that labour would disappear the power to consume what are now its products. Union between the producer and the consumer at home, would, therefore, appear to be more profitable than union with people abroad and disunion among those at home.

## CHAPTER FIFTH.

## WHY IS IT THAT PROTECTION IS REQUIRED?

If all the labour employed in converting food and cotton into cloth, and food, ore, and fuel into iron, be really saved labour—if the whole result be really profit—why is it that men should require protection to enable them to produce cloth and iron? The question is a natural one, and should be fully answered.

It is because it is saved labour, and because the loom and the anvil are merely subsidiary to the plough and the harrow that protection is required. The first and great object of man is, to obtain food and the materials of clothing for himself and family. Neither is fit for use in the form in which it is yielded by the earth—the great machine of production. The grain requires to be ground, and the wool to be spun and woven. He pounds the one and his wife endeavours to convert the other into cloth of some description, however rude. They work with bad machinery, and they lose much time, and yet the loss is less than would be the case were they to carry the grain to the distant flour-mill, or the wool to the yet more distant woollens-mill. By degrees population increases, and the blacksmith comes to exchange horse-shoes for food. The carpenter comes to exchange labour for food. The saw-miller comes to exchange the labour of himself and his

	1845-'46.	1846-'47.	1847-'48.	1848-'49.
Alcohol, bbls. . . . .	1,615	1,844	1,771	3,022
Brooms, doz. . . . .	1,584	5,108	3,760	3,333
Bagging, pieces . . . . .		8,867	12,632	15,910
Candles, boxes . . . . .	6,757	16,622	29,180	39,640
Cooperage, pieces . . . . .	18,388	41,121	36,924	55,617
Lard oil, bbls. . . . .	1,690	6,199	8,277	9,550
Linseed oil, bbls. . . . .	455	6,032	3,878	3,020
Soap, boxes . . . . .	2,708	10,080	11,295	11,308
Starch, boxes . . . . .	2,499	5,826	8,179	7,904
White lead, kegs . . . . .				29,417
Sundry manufactures, packages	7,957	22,251	42,418	94,934

"These small manufactures are too often overlooked by persons from abroad who survey this populous city, and wonder how it came and what it is doing out here in the heart of what was nothing but a wilderness half a century ago. But they really constitute, as every one familiar with them knows, one of the main elements of our prosperity. And behind them lie many others, contributing their share to our comforts and our growth, which as yet enter only slightly into our export trade, and consequently are not included in our commercial tables."

machine for food. In all these cases we see combination of action, and with its growth men obtain horse-shoes and houses more readily than before. Next the little grist-mill comes, and the miller gives the labour of grinding in exchange for food to eat. Again, the little woollens-mill comes, and the miller gives his labour to the carpenter and saw-miller for labour and lumber, to the blacksmith for his iron work, and to the farmer for food and wool. Next the little furnace comes, and the furnace man, in like manner, exchanges with his neighbours, and with the progress of combination of action men obtain, at every step, food, fuel, clothing, iron, furniture, and houses, with increased facility. The first and great desire of man is that of association with his fellow-man, and it is so, because he feels that improvement of his condition, physical, moral, mental and political, is its uniform accompaniment.

Throughout this country, there is a want of combination. Men are perpetually flying from each other, scattering themselves over large surfaces, and wasting the labour that if saved would make them rich. This inability to combine their exertions is the result of artificial causes; and the adoption of the protective system has been produced by an instinctive effort to obtain by its aid that which, had those causes not existed, would have come naturally and without effort.

If we now look to the early history of these provinces, we shall see the gradual tendency towards the establishment of furnaces, woollen-mills, &c. for the purpose of enabling men to combine their exertions for obtaining iron, cloth, and other of the necessities of life with the least loss of labour in the work of transportation, whereby they might be enabled to economize their own labour to be employed in the work of production, while their sons and daughters were obtaining wages in the conversion of wool into cotton, or ore into iron.

The object of the colonial system was that of "raising up a nation of customers," a project "fit only," says Adam Smith, "for a nation of shopkeepers." He was, however, inclined to think, that even for them it was unfit, although "extremely fit for a nation whose government was influenced by shopkeepers." As early as the period immediately following the Revolution of 1688, we find the shopkeeping influence exerted for the "discouragement" of the woollens manufacture of Ireland; and while the people of that unfortunate country were thus prevented from converting their own wool into cloth, they were by other laws prevented from making any exchanges with their fellow-subjects in other colonies, unless through the medium of English ports and English "shopkeepers."

Such being the case, it was little likely that any efforts at combination of exertion among distant colonists, for rendering labour more productive of the conveniences and comforts of life, should escape the jealous eyes of men whose shopkeeping instincts had prompted them to the adoption of such measures in regard to nearer ones. The first attempt at manufacturing any species of cloth in the American provinces was followed by interference on the part of the British legislature. In 1710, the House of Commons declared, "that the erecting of manufactories in the colonies had a tendency to lessen their dependence upon Great Britain." Soon afterwards complaints were made to Parliament, that the colonists were setting up manufactories for themselves, and the House of Commons ordered the Board of Trade to report upon the subject, which was done at great length. In 1732, the exportation of hats from province to province was prohibited, and the number of apprentices to be taken by hatters was limited. In 1750, the erection of any mill or other engine for splitting or rolling iron was prohibited; but pig-iron was allowed to be imported into England duty

free, that it might then be manufactured and sent back again. At a later period, Lord Chatham declared, that he would not allow the colonists to make even a hob-nail for themselves. Such is a specimen of the system, with regard to these colonies. That in relation to the world at large shall now be given.

By the act, 5 George III. [1765,] the exportation of artisans was prohibited under a heavy penalty.

By that of 21 George III. [1781,] the exportation of utensils required for the manufacture of woollens or silk was likewise prohibited.

By that of 22 George III. [1782,] the prohibition was extended to artificers in printing calicoes, cottons, muslins or linens, or in making blocks and implements to be used in their manufacture.

By that of 25 George III. [1785,] it was extended to tools used in the iron and steel manufactures, and to the workmen employed therein.

By that of 39 George III. [1799,] it was extended to colliers.

These laws continued in full force until the year 1824, when the prohibition as to the export of artisans was abolished, and all those relating to the export of machinery so far relaxed that "permission may now be had for the exportation of all the more common articles of machinery," discretion having been given to the Board of Trade, which decides upon each application, "according to the merits of the case." But little difficulty is now, it is said, experienced by merchants, who generally know as to what machines "the indulgence will be extended, and from what it will be withheld," almost as certainly as if it had been settled by act of Parliament; yet, it is deemed advantageous to have it left discretionary with the Board, that they may have "the power of regulating the matter, according to the changing interests of commerce."\* Under this system, the whole quantity of machinery exported in the eleven years, from 1824 to 1835, averaged but two hundred thousand pounds per annum.†

We see thus, that the whole legislation of Great Britain, on this subject, has been directed to the one great object of preventing the people of her colonies, and those of independent nations, from obtaining the machinery necessary to enable them to combine their exertions for the purpose of obtaining cloth or iron, and thus *compelling* them to bring to her their raw materials, that she might convert them into the forms that fitted them for consumption, and then return to the producers a portion of them, burdened with great cost for transportation, and heavy charges for the work of conversion. We see, too, that notwithstanding the revocation of a part of the system, it is still discretionary with the Board of Trade, whether or not they will permit the export of machinery of any description.

Had it not been that there was a natural tendency to have the producer of iron and cloth, and hats, to take his place by the side of the producer of food and wool, there could never have arisen any necessity for such laws as those passed in relation to Ireland and the colonies, and had that tendency not existed, the laws prohibiting the export of machinery would never have been required. It did exist, and it does everywhere exist, and it was for the purpose of preventing the gradual development of a natural state of things, and bringing about an unnatural one, whereby Great Britain might be made "the work-shop of the world," that those laws were passed. The object of protection has been, and is, to restore the natural one.

The effect of those laws has been that of bringing about an unnatural division of her population. The loom and the anvil, in that country, instead of being second to the plough, have become first, with great deterioration in

\* Porter's Progress of the Nation, Vol. I. p. 320.

† Ibid. p. 323.



the condition of both labourer and capitalist. For a long period, the few engaged in manufactures made vast fortunes; while the owners of land were enabled to obtain enormous rents, because the consumers of food increased more rapidly than the producers of food. Land gradually consolidated itself in fewer hands, and the little occupant of a few acres gradually gave way to the great farmer, who cultivated hundreds of acres by aid of hired-labour. The few became richer, and the many went to the poor-house. The value of labour, in food, was diminished, and the value of capital was also diminished, because both were, as they still are, shut out from employment on land, the only employment in which both can be used to an indefinite extent, with constant increase in the return to labour.

By degrees, however, machinery was smuggled out of England, and artisans escaped therefrom; and at length there arose a necessity for legalizing the export of both, and from that time it is that manufactures on the continent of Europe have made great progress. The people there, however, have, like ourselves, laboured under great disadvantages. England had monopolized machinery for so long a time that she had acquired skill that could not readily be rivalled; while she had, by this improper division of her population, kept the price of labour and capital at a lower point—proportioned to the advantage with which they might have been applied—than among her neighbours. Her establishments were gigantic, and always ready to sink those who might undertake competition; while the unceasing changes in her monetary arrangements, the necessary consequences of the colonial system, were of themselves sufficient to spread ruin among all the nations connected with her. Our own experience has been that of all the world.

The necessary consequence of the existence of such a state of things, was resistance by the various independent nations of the world, in the form of tariffs of protection; one of the first results of which was the modification of the law prohibiting the export of machinery. From that period to the present, she has been engaged in an effort to under-work other nations, despite their efforts to shut her out, and with each stage of her progress the condition of her operatives, as well as that of her farm labourers, has deteriorated. Women have been substituted for men, and children of the most immature years for women, and the hours of labour have been so far extended as to render Parliamentary interference absolutely necessary. That interference was opposed, on the ground that all the profit of the machinery resulted from the running of an additional hour. In the mining department of her trade, the system is the same, and it is impossible to read the Parliamentary Reports on the condition of her manufacturing and mining labourers, without being horrified at the awful consequences that have resulted from this effort to tax the world by monopolizing machinery. The moral effects are as bad as the physical ones. Frauds of every kind have become almost universal. Flour is substituted for cotton, in the making up of cotton cloths, to such an extent that, fifteen years since, the consumption for this purpose was estimated at forty-two millions of pounds.\* The quality of iron, and of all other commodities, is uniformly reduced to the point that is required for preventing other nations from producing such commodities for themselves.

By the census of 1831, it was shown that the number of families in England and Wales was 3,303,504, of which 1,170,000 were those of agricultural occupants, or of agricultural and mining labourers, producers of things to be

\* "These goods are generally smoother and more evenly made than American fabrics of the same cost; but they must be used in their dry state, as in washing their appearance is very much changed."—*Dry Goods Reporter*, Nov. 1849.

converted or exchanged; leaving 2,133,000 for the converters and exchangers, and for the money-spending classes—paupers on one hand, and state annuitants, noblemen and gentlemen, on the other. Thus the products of one labourer had to be divided among three.

By the census of 1841, it was shown that, notwithstanding an increase in the last ten years of 960,000 in the number of adult males, there had been an actual diminution of 19,000 in the number employed in agriculture, and thus we have almost four persons to consume the products of one.

Since that date, the tendency has been in the same direction. The transporters, converters, and exchangers have been steadily and rapidly increasing in their proportion to the producers.

With each step in her progress, she thus becomes less a producer, and more and more a mere exchanger, dependent upon the profits of converting and exchanging the products of other nations. This steadily increasing disproportion between the producers and the exchangers, brought about the state of things that led to the repeal of the corn laws, since the date of which there is an evident increase in the tendency to become a mere exchanger of the works of other men's hands. The amount of her trade does not grow with the growth required by this change. The farmer may live and maintain his family out of a crop of five hundred bushels, or even less. The shopkeeper, to live as well, must pass through his hands five thousand bushels; and what is true of the individual shopkeeper is equally true of a nation of shopkeepers, as I will now show.

The man who raises his own food, and sells of it to the amount of \$100, has that sum to be applied to the purchase of clothing and other of the comforts of life. He is selling the product of his own labour.

The man who buys food to the extent of \$100, and sells his products for \$200, has but \$100 to be applied to the purchase of other things than food. To the extent of one-half he is selling the produce of the labour of others.

The man who buys food and leather, each to the extent of \$100, must sell \$300 worth of shoes to give him \$100 to be applied to the purchase of other things than food. To the extent of two-thirds he is selling the labour of others.

So is it with nations. When they sell their own products, their power to purchase from others is equal to the whole amount sold. When they sell the products of others, whether in the same or any other form, their power of purchase is only to the extent of the difference between the price paid and the price received. The bale of cotton exported as yarn, is but the bale imported as wool, and, to the extent of the cost of the wool, represents no part of the power to purchase for consumption. The barrel of American flour exported in the form of cloth or iron, is but the barrel of flour imported, and represents no part of the power to purchase coffee, tea, or sugar.

The actual or declared value of the exports of the produce and manufactures of Great Britain and Ireland, was,

From 1815 to 1819, annual average,	.	.	£44,000,000
" 1827 to 1834, " "	.	.	38,000,000
" 1845 to 1848, " "	.	.	50,500,000

From these sums is to be deducted, in all cases, the cost of the raw material required to produce the commodities exported.

The quantity of cotton manufactured in the first period amounted to 100,000,000 of pounds per annum, and the average price was 19 pence,\*

\* McCulloch's Com. Dict., art. Cotton.

making the whole cost about £8,000,000. The value of cotton goods exported was £16,500,000, of which the raw material may have been about £5,500,000.

The consumption of foreign wool was about 7,000,000 of pounds weight, and with this exception the whole amount of the export was of domestic production.

The import of food amounted to about 1,500,000 quarters, or 13,500,000 bushels of 60 pounds weight.

Putting together all the foreign food and raw materials required for the product of £44,000,000 of exports, the total cost could scarcely have exceeded £12,000,000, leaving £32,000,000 as the value of domestic products and labour exported by a population of 21,000,000, being equal to about £1·10 per head, or \$7·20, to be applied to the purchase of foreign commodities for domestic consumption.

In the second period, the quantity of cotton manufactured averaged about 275,000,000 of pounds, and the price had fallen to about 8d., making the cost about £9,000,000. The proportion exported had somewhat increased, judging from the difference between the quantity as given by the official value, and the product as given by the declared value, and the amount of labour had decreased, the exports of mere yarn having risen from £1,200,000 to between four and five millions. The value of the raw cotton thus exported may have been £6,000,000.

The quantity of foreign wool retained for home consumption had risen to 30,000,000 of pounds, being an important portion of the quantity exported in the form of cloth.

The average import of food was, as before about 1,500,000 quarters. If, now, we estimate the total consumption of food and other raw materials at £14,000,000, and deduct that sum from the amount of exports, we shall have remaining £24,000,000 as the value of the products and labour exported by a population of 23,000,000, being about 21s. or \$5 per head, to be appropriated to the purchase of foreign commodities, other than grain, for consumption.

In the third period, the declared value of cotton goods exported had risen to about £25,000,000, and the cost of the raw cotton required for this purpose, in the year 1846, was estimated at about, . . . £8,500,000

And in the year 1847, at . . . . . 8,800,000

For 1845 and 1848, the average was about . . . 7,350,000

making a total average of £8,000,000. To this must now be added the wool of Australia, Spain and Germany, of which the manufacture had risen to 70,000,000 of pounds; the silks of Italy and China; the hides, the indigo and other colouring materials, the gold, and innumerable other articles used in the production of this large amount of manufactures; and I shall be safe in putting the whole amount, for those years, at not less than £14,000,000, and it is probably much more.

The import of flour and grain averaged about 6,250,000 quarters, and as the last of those years amounted to about five and a half millions, it may be safe to assume that the average quantity required will not fall materially short of six millions, equal to fifty-four millions of bushels of sixty pounds each, and if the cost of these be averaged at 4s. per bushel, the amount will be . . . . . £10,800,000\*

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\* The amount actually expended in fifteen months is stated to have been £33,000,000. This, however, was an exceptional case, and my object is rather to show from the past what may be taken as an average of future years.



If, now, we add for vast quantities of live-stock, pork, beef, lard, butter, cheese, and other articles of food, the whole consumption of which was formerly supplied at home, only 1,000,000<sup>3</sup>

We shall have a total of . . . . . 25,800,000

To be deducted from the gross amount of exports, and leaving only . . . . . 24,700,000

as the value of the export of the products and labour of the twenty-seven and a half millions composing the population of the United Kingdom, being about 18s. or \$4.32 per head, to be applied to the purchase of sugar, tea, coffee, rice, spices, and numerous other foreign articles of food—for lumber, tobacco, foreign manufactures of every description, and for the purchase of the cotton, silk, wool, dye-stuffs, hides, &c. &c., required for the manufacture of clothing used at home.

We have here a constantly diminishing quantity to be applied to the purchase of various descriptions of food that from luxuries have become necessities of life, and that of the materials of clothing. It follows, of course, that as food is the article of prime necessity, the amount that each expends of clothing is very small indeed; the consequence of which is, that the people of England, engaged in furnishing cheap clothing to all the world, are not only badly fed but exceedingly badly clothed, the cost of clothing, in labour, being so great as to place it beyond their reach,\* the amount that can be expended for that purpose tending rather to decrease. Whenever a good crop causes a large quantity of cotton to come to market, the price falls to the point that is necessary to enable the purchaser at home to absorb the surplus that cannot be exported; and when the crop is short, the consumption is limited to the quantity that can be purchased by the small amount to be expended. The whole sum now applicable to this purpose appears not to vary greatly from 2s. per head, sufficient to purchase three pounds at 8d., or six pounds at 4d. This will be seen by an examination of the following table:—

\* By reference to the report of the Assistant Commissioner charged with the inquiry into the condition of women and children employed in agriculture, it will be seen that a change of clothes seems to be out of the question. The upper parts of the under-clothes of women at work, even their stays, quickly become wet with perspiration, while the lower parts cannot escape getting equally wet in nearly every kind of work in which they are employed, except in the driest weather. It not unfrequently happens that a woman, on returning from work, is obliged to go to bed for an hour or two to allow her clothes to be dried. It is also by no means uncommon for her, if she does not do this, to put them on again the next morning nearly as wet as when she took them off.

The evidence laid before Parliament in regard to the situation of the operatives in coal mines, showed that men and women, boys and girls, were accustomed to work together in a state of absolute and entire nudity.

The slowness with which the power of consuming other articles than clothing has grown is remarkable.

In 1803, that of paper was . . . . .	31,699,537 pounds.
1841, with almost double the population, only . . . . .	97,103,548 "

The great diminution in the cost of cotton and linen cloth had been attended with a corresponding reduction in the cost of rags, while there had been great improvements in the mode of manufacture. The quantity of labour that could be exchanged against paper had evidently diminished.

The consumption of candles in 1801, was . . . . .	66,999,080 pounds.
In 1830 it was . . . . .	116,851,305 "

having little more than kept pace with the population.

Average cost of Cotton in England.		Home consumption.	Money price, per head.	
	d.		s.	d.
1845 . . .	4½	170 millions	about	2 4½
1846 . . .	5	155 "	"	2 3
1847 . . .	6½	80 "	"	1 7
1848 . . .	4½	170 "	"	2 3

We see, thus, that she clothes her people at the cost of the cotton planter. She has a certain quantity of labour that she can give in exchange for cotton, and the price of the whole import is regulated thereby. If the crop is large, she takes a great deal for the money; if it is small, she takes but little; and thus the producer not only derives no benefit from large crops, but is so much injured thereby, that it is actually more profitable to have one of 2,000,000 of bales, than one of 2,700,000. Had that of the present year reached three millions, he would have been ruined, for freights would have been high, while prices abroad would have fallen to a lower point than has ever yet been reached.

Instead of applying her labour to the cultivation of her own soil, she pursues a course having for its object that of compelling all the farmers and planters of the world to make their exchanges in her markets, where she fixes the price for the world. Her power to apply the proceeds of labour to the purchase of other commodities than those of prime necessity is small, and gradually but steadily diminishing; and whenever the labours of the producer are rewarded with liberal returns, he is nearly ruined, because the price falls below the cost of production.

The system is altogether so remarkable that at some future day it will be deemed almost impossible that it should ever have been tolerated. She has a certain quantity of the means of transportation and conversion, and being thus provided she desires that all the cotton and sheep's-wool of the world shall be brought to her, that it may be spun and woven, and that she may take toll for spinning and weaving it. The more that is brought to her the less of it she gives back to the producer, and the price she pays him fixes the price he receives from all the world. How the system works may be seen from the following statement:—

	1815 to 1819.	1827-1834.	1845-1846.
Cotton consumed, lbs. . . . .	100,000,000	275,000,000	596,000,000
Value . . . . .	£8,000,000	9,000,000	11,400,000

She pays for this in cotton-cloth and iron, the prices of which, at these periods were as follows:—

A piece of calico, of 24 yards . . . . .	16/6*	7/6†	6/7
A ton of merchant-bar iron . . . . .	£11‡	£7 5	£9 10

Had the whole been paid in these, the planter would have received of

Cloth, pieces . . . . .	9,700,000	24,000,000	34,700,000
Or iron, tons . . . . .	730,000	1,250,000	1,200,000

The *additional* freight, home and foreign, charges, commissions, &c., in the last period were, at three cents per pound, on 496,000,000 of pounds, say \$15,000,000. For this the planter would receive, in *Liverpool*, 470,000 *additional* tons of iron, the value of which, in *Liverpool*, at the present moment, would be about \$11,000,000, and thus he not only gave away his cotton, but gave with it a large portion of the cost of transportation. The whole return to him for 600,000,000 was not as great as it had been to 100,000,000.

It thus appears that notwithstanding all the improvements in manufacture, the planter had to give in the last period *six times* the quantity of cotton to

\* McCulloch's Statistics, Vol. II. p. 70.

† This is the average of the years from 1831 to 1834, as given in Burns's Commercial Glance, and copied in the Merchants' Magazine, Vol. XIX. p. 277.

‡ Average of 1817 to 1819—Merchants' Magazine, Vol. XX. p. 337.

obtain *three and a half times* the cloth that he could have had in the first—and *six times* the quantity to obtain a *smaller quantity* of iron. A more admirable mode of taxing the world was certainly never devised.

The result of the system is, that the productiveness of agricultural labour is declining in every portion of the world that does not protect itself against this “war upon labour and capital,” as I will now show.

Consumption is measured by production. Every man is a consumer to the whole extent of his production. To that point he will go, and beyond it he cannot go. The first of his wants is food; next comes clothing; after this follow the conveniences and luxuries of life. If his productive power increases, his power to obtain clothing increases rapidly, because the whole surplus is applicable to other things than food. If it diminishes, his power to obtain clothing diminishes with great rapidity, for food he must have. That it has diminished, and is now diminishing rapidly, will, I think, be evident from the following facts:—

Sixty years since, the price paid by the consumers of cotton to the producers of it was estimated at \$40,000,000.

From 1827 to 1834, both inclusive, the crops of the United States averaged 945,000 bales, and the home consumption about 145,000, leaving 800,000 for export. The average price was about \$40 per bale, and the product \$32,000,000.

In this period, India continued to produce extensively of cotton, and to manufacture cotton goods. The China market was not opened to the free traders until 1831, and it required some time to substitute the cotton cloth of England for the cotton and cloth of India. With every day that has since elapsed, the production of cotton has declined, as the manufacture has been passing towards annihilation. Cotton was then extensively raised in the West Indies, Brazil, Egypt, Africa, Mexico, and elsewhere; and the total product, exclusive of that of the United States, was estimated at 450,000,000 of pounds, or about one-fifth more than that of the Union. Averaging the whole at the same price, we should now obtain an annual expenditure, excluding our own, for cotton wool, of \$78,000,000.

From 1842 to 1848, both inclusive, the crop averaged 2,060,000 bales, and the home consumption about 400,000, leaving 1,660,000 for export. Two hundred thousand of these may be given to the Zoll-verein, and other countries of Europe that have protected themselves against the system, not as the increased quantity actually taken under low prices, but as that which would have gone at high ones, leaving 1,460,000 for the quantity that may be supposed to be influenced by the system. The average price, during that period, was seven and a half cents, or \$34 per bale, and the average product of the portion of the crop thus exported, \$50,000,000.

Since then, the cultivator of this most important commodity, throughout the world, has been ruined, and it is greatly to be doubted if the whole production, outside of the Union, is now more than one half of what it was thirty years since; but, at the utmost, it cannot exceed 270,000,000; and if we now assume that quantity, and, as before, put the whole at the same price, we shall obtain, as the amount paid for cotton, by almost the whole population of the world, outside of the Union, as follows:—

For the crop of this country,	.	.	\$50,000,000
For that of the rest of the world,	.	.	20,000,000
			<hr/>
			\$70,000,000

Showing a large reduction, notwithstanding the increase in the number of persons employed in its production, and the increase of those who should consume it, and yet the case, as here stated, does not represent the real



diminution in the amount paid to the producers. Of the cotton of India, nearly the whole value is now swallowed up in freights, and while the cost to the consumer is large, the yield to the producer is scarcely more than two cents per pound. A more full examination of the subject would, I believe, result in showing that the producers of cotton, taken as a body, do not receive in return for all the clothing material that has to so great an extent superseded wool, flax, &c., from the people of the world outside of the limits of the Union, twenty millions of dollars more than they did sixty years since.

A similar examination of the movement in regard to sugar, coffee, wool, and other articles, would yield the same results, for the exhaustion is everywhere the same. The whole effect of the system is that of reducing the farmer and the planter—the producers of the good things of the world—to the condition of an humble dependence upon the owners of a quantity of small machinery for the conversion of wool into cloth, that they themselves could purchase at the cost of less labour than, for want of it, they waste in each and every year.

Let us now look to the results, as exhibited in the immediate dependencies of England.

With this vast increase in the importation of food from abroad has come the ruin of the people of Ireland. Deprived of manufactures and commerce, her people were driven to live by agriculture alone, and she was enabled to drag on a miserable existence, so long as her neighbour was content to make some compensation for the loss of labour by paying her for her products higher prices than those at which they might have been elsewhere purchased. With the repeal of the corn laws, that resource has failed; and the result is a state of poverty, wretchedness, and famine, that has compelled the establishment of a system which obliges the landowner to maintain the people, whether they work or not; and thus is one of the conditions of slavery re-established in that unhappy country. From being a great exporter of food, she has now become a large importer. The great market for Indian corn is Ireland—a country in which the production of food is almost the sole occupation of the people. The value of labour in food, throughout a population of eight millions, is thus rapidly decreasing.

From an inquiry instituted by Lord Clarendon, in 1847, and conducted in the most careful manner, it was ascertained that out of 20,800,000 acres of which the kingdom consists, there were but 5,200,000 under crop, and that the yield of cereal grains, chiefly oats, averaged 10 bushels (of 70 pounds) per head, while that of potatoes was 561 pounds per head. The cattle amounted to 2,591,000, or less than one to three persons of the population; the hogs to 622,000, or one to thirteen; and the sheep to 2,186,177, or one to four. Such are the products of a nation, exclusively agricultural, whose numbers were about one-half those of the people of the Union, at our last census.

Were it possible now to ascertain the quantity of food, per head, produced in Great Britain and Ireland, it is probable that it would be found to be less than it was five years since, and that the whole quantity, foreign and domestic, was not materially greater than at that date. If so, it follows that the whole amount of labour expended in purchasing and fashioning the cotton of other lands to be given in exchange for food, is lost labour, and that the average quantity of food and of other commodities obtainable throughout the kingdom in return for any given quantity, tends downwards instead of upwards; and that such is the case there is reason to believe. As evidence that such is the fact, we may take the expenditure for support of paupers, which in 1837 was £4,207,000, and for 1844, 5, and 6, averaged £5,890,000,

being an increase of forty per cent. in eight years. In 1848, it had attained the enormous height of £7,800,000. If now to this we were to add the expenditure for the same purpose in Ireland, we should find the growth to be absolutely terrific.

As a full answer to this, the English economist would point to the increased consumption of certain commodities; but that increase is maintained, as we have seen, by the oppression and ruin of the agriculturist everywhere. The whole system has for its object an increase in the number of persons that are to intervene between the producer and the consumer—living on the product of the land and labour of others, diminishing the power of the first, and increasing the number of the last; and thus it is that Ireland is compelled to waste more labour annually than would be required to produce, thrice over, all the iron, and convert into cloth all the cotton and wool manufactured in England. The poverty of producers exists nearly in the ratio in which they are compelled to make their exchanges in the market of Great Britain, foregoing the advantages that would result to them from the free exercise of the power of associating for the purpose of combining their exertions, and thus rendering their labour more effective.

The manufacturers of India have been ruined, and that great country is gradually and certainly deteriorating and becoming depopulated, to the surprise of those of the people of England who are familiar with its vast advantages, and who do not understand the destructive character of their own system. The London *Economist* says:—

“Looking to our Indian empire, we cannot but be struck with the singular facilities which—in climate, soil, and population—it presents to the commerce of Great Britain. At first sight, it seems to offer every thing that could be devised, in order to induce to a commercial intercourse almost without limit. There is scarcely one important article of tropical produce which is consumed in this country, either as the raw material of our manufactures, or as an article of daily use, for the production of which India is not as well, or better, adapted than any other country; while its dense and industrious population would seem to offer an illimitable demand for our manufactures. Nor are there opposed to these natural and flattering elements of commerce any fiscal restrictions to counteract their beneficial results. Indian produce has long entered into consumption in the home markets on the most favourable terms; while, in the introduction of British manufactures into India, a very moderate duty is imposed. Yet, notwithstanding all these advantages, it is a notorious fact, deducible alike from the tendency which the supply of some of the most important articles of Indian produce show to fall off, and from the stagnant, or rather declining, state of the export of our manufactures to those markets—and, perhaps, still more so, from the extremely unprofitable and unsatisfactory result which has attended both the export and import trade with India for some time past,—that there exist some great and serious impediments to the realization of the just and fair hopes entertained with regard to our Indian trade.”

Another writer\* speaks of it as a country whose exports are rapidly diminishing. Sugar, he says, does not increase, while indigo decreases, and cotton is reduced one-third to one-half. The revenue is deficient. Gazerat and Cutch, which once supplied cotton to half the world, have almost ceased to produce it. The growth and manufacture of cotton have disappeared from Bengal, which once gave to the world the Dacca muslins, the finest in the world. Cotton fields have everywhere relapsed into jungle.

Year after year we are told of efforts being made to increase the product and improve the quality of India cotton, and yet year after year the prospect of improvement becomes more remote, and necessarily so, because agricultural improvement under the existing impoverishing system is im-

\* London correspondent of the National Intelligencer.

possible. For a short period, premiums were granted on what is called free sugar—to wit, that raised by the wretched Hindoo who perishes of starvation, the consequence of the system—and while that policy was maintained its cultivation made some progress, but since the abolition of the restrictions on slave-grown sugar, every thing tends downward.\*

Ireland and India are thus in the same condition. The West Indies are ruined, and Canada, Nova Scotia, and New Brunswick, now seek annexation, that they may have protection from a system under which they are being ruined. The owner of land, everywhere, knows that it would be doubled by the change, and the labourer transfers himself to the south of the boundary-line, that he may find employment and good wages, which cannot be found at the north of it. Those who remain north of it now anxiously seek for admission for their grain, because protection maintains a market that now they cannot have.

In the existing state of things they have to compete with the low-priced labour of Russia and Poland, and are ruined. They desire, therefore, that their competition may be with the protected farmers and labourers of the Union.

Lord Sydenham, in a letter to Lord John Russell, which accompanied his Report on Emigration to Upper Canada, observed :

"Give me yeomen, with a few hundred pounds each, who will buy cleared farms, not throw themselves into the bush, and I will ensure them comforts and independence at the end of a couple of years—pigs, pork, flour, potatoes, horses to ride, cows to milk—but *you must eat all your produce, for devil a purchaser is to be found*: however, the man's wants are supplied, and those of his family; he has no rent or taxes to pay, and he ought to be satisfied."

Here is the cause of the desire for annexation that now exists throughout Canada. There are no consumers at hand, and the farmer cannot exchange his corn for cloth or iron, the consequence of which is, that labour and land are almost valueless. So is it everywhere. Every colony therefore desires to separate itself from England, and all would gladly unite with these United States, and for no other reason than that they might have protection.

That the colonial system is rapidly approaching its close must, I think, be obvious to all who take the trouble to inform themselves of the condition of the people of her colonies, who have been compelled to bear with it; and thence satisfy themselves that the independent nations of the world must continue to increase and to strengthen their measures of resistance until it shall be ended, that thenceforth there may be perfect freedom of trade.

It is "a war upon the labour and capital of the world." Its object is that of preventing the spinner and weaver from combining their efforts with those

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\*"For many years they [Messrs. Arbuthnot & Co., of Madras] have been the most extensive manufacturers of sugar in Southern India, converting to the extent of thousands of tons annually the coarse jaggery made by the ryots into the fine product which finds its way into the market; but the attempt to raise the cane was first tried about two or three years since, and it is needless to say that no cost or skill was spared to render it successful. Planters were brought from the West Indies at liberal salaries to direct the cultivation, and machinery of the most complete and extensive character was imported from England to irrigate the soil and manufacture the sugar on the spot. No project could possibly be set on foot under circumstances more favourable, but the upshot is that the land taken in Rajahmundry and Dawlaishwarum has been relinquished, and the cattle turned into the fields of standing cane. \* \* \*"

"The question of competition to be maintained on the existing system with the West Indies and the countries in which slave labour prevails must rest for future consideration. At present we have arrived at the important conclusion, that, under the most favourable circumstances, we cannot hope to alter the present mode of cultivating the sugar-cane in Southern India."—*Athenæum*.



of the farmer and planter,—compelling the latter to work alone, and therefore disadvantageously, and then to give two-thirds of the crop for the maintenance of horses and wagons, ships and men, brokers and merchants, whose services would not be needed were the system abolished. Its effects have been everywhere, to render men depressed and poor. Desiring to liberate themselves from it our ancestors made the Revolution, and the Canadians have now formed a league, induced thereto by their observance of the wonderful results that have been here obtained.

Thus far, the system has been maintained at home by this power to tax the world for its support. India contributes three millions sterling per annum,\* but there is a gradual diminution in the power to pay. Canada and the West Indies have paid their share, but the connection with the former is likely soon to be at an end, and the latter are ruined. This country is the main support of the system, but that support is gradually being withdrawn, and when it shall be absolutely so, the destructive effects of it upon England herself will become fully obvious. It will then be seen that the wealth of that country is really, to use the words of Carlyle, but a magnificent “sham.” The few are rich, but the many are poor, and the mass of wealth is by no means great.

The whole amount of capital invested in buildings, machinery, &c. for the cotton manufacture, in 1834, was estimated at twenty millions of pounds sterling† or less than a hundred millions of dollars, being only double what has been expended in the effort to bring into activity the anthracite coal mines of Pennsylvania. She has also machinery for the production of a large amount of coal and iron, but the same quantity could be produced in this country in a few years, without an effort. She has made a considerable amount of rail-roads, but she broke down under the effort, and yet roads are made in that country at far less cost than here, and we have now more miles in operation.

The nominal cost of her roads is great, because the prices paid for land are high, and large sums are paid to lawyers, conveyancers, &c., &c., but these are merely transfers of property, not investments of it. The real investment is only the labour employed in grading the road, erecting the bridges, and getting out the iron, and the cost of these per mile is less than for any well-made road in this country. The power of England to make investments of labour is less than half of what it was in this country from 1844 to 1847, and less than one-third of what it would now be had the production of coal, and iron, and cotton goods been allowed to increase at the rate at which it was then increasing. Her system tends to the enrichment of the few, and hence there results a show of wealth far, very far, beyond the reality.

The impoverishing effects of the system were early obvious, and to the endeavour to account for the increasing difficulty of obtaining food where the whole action of the laws tended to increase the number of consumers of food, and to diminish the number of producers, was due the invention of the Malthusian theory of population, now half a century old. That was followed by the Ricardo doctrine of Rent, which accounted for the scarcity of food by asserting, as a fact, that men always commenced the work of cultivation on rich soils, and that as population increased they were obliged to resort to poorer ones, yielding a constantly diminishing return to labour, and producing a constant necessity for separating from each other, if they would

\* “Altogether it has been calculated that the tribute which India pours into the lap of England is at least equal to three millions sterling.”—*Parker's Progress of the Nation*, Vol. iii. p. 354.

† McCulloch's *Statistics*, Vol. 2, page 75.

obtain a sufficiency of food. Upon this theory is based the whole English politico-economical system. Population is first supposed to be superabundant, when in scarcely any part of the earth could the labour of the same number of persons that now constitute the population of England obtain even one-half the same return. Next, it is supposed that men who fly from England go always to the cultivation of rich soils, and therefore every thing is done to expel population. Lastly, it is held that their true policy when abroad is to devote all their labour to the cultivation of those rich soils, sending the produce to England that it may be converted into cloth and iron, and they are cautioned against any interference with perfect freedom of trade as "a war upon labour and capital."

Colonization is urged on all hands, and all unite in the effort to force emigration in the direction needed to raise up "colonies of customers." It is impossible to read any work on the subject without being struck with the prevalence of this "shopkeeping" idea. It is seen everywhere. Hungary was to be supported in her efforts for the establishment of her independence, because she was willing to have free trade, and thus make a market for British manufactures. The tendency of the Ricardo-Malthusian system to produce intensity of selfishness was never more strikingly manifested than on that occasion.

It happens, unfortunately, that the system is without a base, the fact being exactly the reverse of what it is stated by Mr. Ricardo to be. Throughout the world, and at all periods of time, men have commenced the work of cultivation upon the poorer soils, leaving to their successors the clearing of river bottoms and the draining of swamps; and the increase of population it has been that has everywhere enabled men to subject rich soils to cultivation.\* Food, therefore, tends to grow faster than population, when no disturbing causes exist, and in order that the increase of population may take place, it is indispensable that the consumer take his place by the side of the producer. When that is not the case, the inevitable consequence is that the waste of labour is great, and that the perpetual cropping of the land returning to it none of the refuse, exhausts the land and its owner, and compels the latter to fly to other poor soils, increasing the transportation and diminishing still further the quantity of cloth and iron to be obtained in return to a given amount of labour.

We thus have here, first, a system that is unsound and unnatural, and second, a theory invented for the purpose of accounting for the poverty and wretchedness which are its necessary results. The miseries of Ireland are charged to over-population, although millions of acres of the richest soils of the kingdom are waiting drainage to take their place among the most productive in the world, and although the people of Ireland are compelled to waste more labour than would pay, many times over, for all the cloth and iron they consume.† The wretchedness of Scotland is charged to over-

\* For a full examination of this question I must refer to my book, "The Past, the Present, and the Future."

† Of single counties, Mayo, with a population of 389,000, and a rental of only 300,000*l.*, has an area of 1,364,000 acres, of which 800,000 are waste! No less than 470,000 acres, being very nearly equal to the whole extent of surface now under cultivation, are declared to be reclaimable. Galway, with a population of 423,000, and a valued rental of 433,000*l.*, has upwards of 700,000 acres of waste, 410,000 of which are reclaimable! Kerry, with a population of 293,000, has an area of 1,186,000 acres—727,000 being waste, and 400,000 of them reclaimable! Even the union of Glenties, Lord Monteagle's *ne plus ultra* of redundant population, has an area of 245,000 acres, of which 200,000 are waste, and for the most part reclaimable, to its population of 43,000. While the barony of Ennis, that abomination of desolation, has 230,000 acres of land to its 5,000 paupers—a proportion which, as Mr. Carter, one of the principal proprietors, remarks in his circular advertise-

population when a large portion of the land is so tied up by entails as to forbid improvement, and almost to forbid cultivation. The difficulty of obtaining food in England is ascribed to over-population, when throughout the kingdom a large portion of the land is occupied as pleasure grounds, by men whose fortunes are due to the system which has ruined Ireland and India.\* Over-population is the ready excuse for all the evils of a vicious system, and so will it continue to be until that system shall see its end, the time for which is now rapidly approaching.

To *maintain* it, the price of labour in England must be kept steadily at a point so low as to enable her to underwork the Hindoo, the German, and the American, with all the disadvantage of freight and duties. To *terminate* it, the price of labour in England must be raised to such a point as will prevent that competition and compel her to raise her own food, leaving others to consume their own, and such must be the result of the thorough adoption of the protective system, even by the United States alone.

The cause of the difficulty in which England now finds herself is the unnatural disproportion between consumers and producers. Men are cheap and therefore undervalued. Establish a market for these men, and their value will rise, and such will be the effect in every part of Europe. We have seen that immigration into this country increased in the period between 1830 and 1834, from twelve to sixty-seven thousand; that from that period to 1843 it remained almost stationary; and that in the last four years it has more than trebled. Now, let us suppose that the system of 1828 had been maintained, and that the mining of coal, the smelting and rolling of iron, and the manufacture of cotton and woollen cloths, &c. had gone on uninterruptedly, producing a great demand for labour to be employed in the various branches of manufacture, in the making of roads, the clearing of lands and the building of houses, and that the inducements for emigration to this country had been constantly increasing to such an extent as to cause the

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ment for tenants, "is at the rate of only one family to 230 acres; so that if but one head of a family were employed to every 230 acres, there need not be a single pauper in the entire district; a proof," he adds, "**THAT NOTHING BUT EMPLOYMENT IS WANTING TO SET THIS COUNTRY TO RIGHTS!**" In which opinion we fully coincide.—*Westminster Review*.

\* Poulett Scrope, a member of the British Parliament, has inserted in the London Morning Chronicle seven letters of Notes of a Tour in the United Kingdom, with a view to ascertain whether the labouring population be really redundant. His general conclusion is expressed in these terms:—"I have selected striking illustrations in support of the view I have always entertained, and which is at length obtaining very general acquiescence: namely, that the population of the United Kingdom is not really in excess; that the land is everywhere—even in the most seemingly over-peopled and pauperized districts of Ireland—amply capable of repaying the employment of additional labour to an indefinite extent, if only judicious use be made of it by those whom the law has intrusted with its ownership, and that the law itself be so modified as to encourage, instead of discouraging, improvement, to secure to industry its due reward, and to neglect and mismanagement its fitting punishment."

The notes on Ireland, afford a frightful picture of one of the many evils with which that country is afflicted:

"In Galway Union, recent accounts declared the number of poor evicted, and their homes levelled within the last two years, to equal the numbers in Kilrush—4,000 families and 20,000 human beings are said to have been here also thrown upon the road, homeless and homeless. I can readily believe the statement, for to me some parts of the country appeared like an enormous graveyard—the numerous gables of the unroofed dwellings seemed to be gigantic tombstones. They were, indeed, records of decay and death far more melancholy than the grave can show. Looking on them, the doubt rose in my mind, am I in a civilized country? Have we really a free constitution? Can such scenes be paralleled in Siberia or Caffraria?"



ratio of increase from 1830 to 1834 to be maintained, and see what would have been the result. By the year 1839 it would have reached 300,000, and five years after it would have exceeded a million, and the growth would every year have been more rapid, for the demand for labour would have increased faster than the supply.

Before this time, the flight from Great Britain and Ireland alone would have far exceeded half a million per annum, and what would be the effect of such a state of things may be conceived by those who read the following article which I take from the London *Times*.

The flight of a quarter of a million inhabitants of these islands to distant quarters of the world in 1847, was one of the most marvellous events in the annals of human migration. The miserable circumstances under which the majority left their homes, the element traversed in quest of a refuge, the thousands of miles over which the dreary pilgrimage was protracted, the fearful casualties of the voyage by shipwreck, by famine and by fever, constituted a fact which we believe to be entirely without precedent, and compared with which the irruption of the northern races into southern Europe became mere summer's excursions; but, perhaps the marvel of the event is surpassed this year. The impetus, or rather the combination of impelling causes, no longer exists. It might be supposed that so extensive a drain had exhausted the migratory elements of the nation.

It might also be expected that the countries which last year could not receive the fugitive masses without much difficulty and complaint, would have offered vehement protests against an immediate renewal of the hungry invasion. It is, nevertheless, the fact that the migration of this year is nearly equal to that of the last. The grand total from all the British ports for the first eleven months of last year was 244,251; for the first eleven months of this year, 220,053. Nor do these figures represent the whole truth of the case. They are merely the numbers of those who embarked at ports where there are government emigration officers, and who have passed under official review. Some thousands of the better class of emigrants are not included in the census. There can, therefore, be no doubt that in these two years more than half a million natives of these islands have fled to other shores.

The annual migration, it appears, is now approaching the annual increase of our population, which is vulgarly magnified into a thousand a day, but in fact is not more than about 290,000 in the year. Now, it is not to be imagined for a moment that Great Britain, at all events, has reached the limit of its population. The capital, the stock and the "plant" of the island are continually increasing and have lately increased more rapidly than ever. They also demand more and more hands for their further development. Under ordinary circumstances, therefore, we should be justified in dreading a migration which left the population stationary; and which, with a view to the growing trade and resources of the country, was rather a depopulation than anything else. At all events, the fact suggests that a spontaneous movement of so gigantic a character may well be left to itself, and requires no artificial stimulus. The matter certainly has come to that pass which makes caution the first duty of the state.

It is from Ireland that we draw our rough labour. The Celt—and we are bound to give him credit for it—is the hewer of wood and drawer of water to the Saxon. Can we spare that growing mine of untaught but teachable toil? *The great works of this country depend on cheap labour.* The movement now in progress bids fair to affect that condition of the national prosperity. The United States gain what we lose.

Protection is a measure of necessary defence against a system that tends to lessen everywhere the value of labour, and if applied effectually, the correction will be speedy, and thenceforward trade may everywhere be free. To those who doubt this, I would recommend an examination of the effects that would now result from the abolition of the tariff, and the substitution of free trade for the present imperfect protection. They could not but see that it would close every mill and furnace in the Union, cutting off a demand for 600,000 bales of cotton, and a supply of 700,000 tons of iron. Where then should we sell the one, or where buy the other? The labourer in factories and furnaces would then grow food, but the market abroad for food is

now almost closed\*—or cotton, and the market for cotton is already ruined whenever the crop touches the point of two millions and a half of bales. Protection is right or wrong. Free trade is right or wrong. If protection is right, it should be complete and fixed, until no longer needed. If free trade is right, custom-houses should be abolished. Halfway measures are always wrong.

The direct effect of the maintenance of the present system, that of 1846, is to cause renewed efforts on the part of England for engrossing the market of this country, whereas a return to that of 1842, were it made with the approbation and consent of all parts of the Union, would be followed by results that would compel a change of policy. The direct effect of a thorough and complete change in our system would be, that of teaching the whole people of England that if they "expect to be prosperous and happy, they must seek those blessings in the steady pursuit of a British policy—in cultivating domestic resources—in protecting domestic interests—in drawing closely the bonds of concord, strengthened by the ties of mutual dependence among themselves, and abandoning the shadowy and delusive expectation of finding compensation in foreign commerce for the destruction of the springs of domestic consumption."

The harmony of all real interests among nations is perfect. The system of England is rotten and unsound—injurious to herself and to the world. It is the cause of pauperism and wretchedness at home and abroad, and the more effective the measures that may be adopted for the purpose of compelling its abandonment, the better will it be for her and for ourselves. The road to absolute freedom of trade lies through perfect protection.

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\* The present price of flour in England varies little from \$5. What is likely soon to be the price of pork, may be judged of from the following, which I take from the papers of the day.

A London letter, under date of Oct. 12, from a mercantile house extensively engaged in the trade, says: "We have the pleasure to hand you annexed our price current, in which you will see the comparative imports for the last three years; the present year showing an excess of 25,000 packages of American bacon more than the last. The general expectation with us is that prices must be very low the approaching season, from the increase of hogs in Ireland and Germany, and the very great production of hogs and all kinds of meat in this country more than usual. We incline to the opinion that should the same quantity and quality of American come to this market the next, as during the past season, one-half of it will have to be sold for soap purposes. You will have heard that our government contract for pork was taken at 10/ per cwt. less than last year, which we think is a pretty fair criterion of the market."

## WOOL.—IMMIGRATION.

*Interesting extracts from an Agricultural Address, delivered before the Agricultural Society of Lewis County, New York, on the 20th of September last. By the Hon. C. E. CLARKE, Member of the present House of Representatives. With an Introduction, and brief notes, by the editor of "The Plough, the Loom, and the Anvil."*

IF, in Congress, nothing, or next to nothing, except the Report of the Hon. Hugh White of New York, last Session, that deserves the name of a national movement, has been done to indicate that agriculture has attracted the care and patronage of the government, in any proportion to its comparative importance; it is not because there are not many members of that body who understand the wants of that greatest of all branches of national industry, and who properly appreciate its paramount claims to attention. *Why is it then*, let us ask, that while for other and less useful interests and institutions, Departments are created, and so many millions expended; in respect of our *Agriculture* (with the prosperity of which all other industries are connected), the beginning and the end of patronage to it, should consist in the mere appointment of committees, some of which have never held a single meeting? And even these committees were not appointed, until a date comparatively recent, after the measure had been repeatedly urged, in the old American Farmer, by the humble pen which traces these lines.

No! The reason of this neglect of an industry which may be called the *back-bone* of the land, is not, we may be assured, because there are not many members of Congress alive to the obligation of making provision, as well for agricultural as for military surveys, schools and instruction. It is rather because the *farmers themselves are too inert*, and too much given up to the uses of the demagogues, by whom they are ridden; to assert their own rights, and to demand that a small portion of the tax they pay, for the enormous expenditures of the government, should go to the dissemination of that sort of knowledge, which would give us a better understanding of the science and principles of agricultural labour and machinery;—as well as for schools that instruct us in the scientific use of our military power and resources. It is hardly to be doubted that there is, from every State in this Union, among members who feel and own that they *represent planters and farmers*, those who are in every way well qualified, and well disposed to discern the rights of their constituents, to the principal care of the government; and its obligation to give precedence to the plough in all acts of legislation for the general welfare! Now the question arises, since they well enough know what is needed, and the wishes of those they represent (notwithstanding their apparent apathy), ought they not to volunteer in such a cause, to bring forward measures for its advancement? Why should it be esteemed more meritorious for individuals to volunteer in wars of aggression and conquest; than for representatives, whose duty it is, to step forward and seek to be the foremost in the work of creating abundance and prosperity at home?

At the call of societies, and on all festive occasions in honour of the plough, our great and public men are prompt to manifest the quickest and most honourable sensibility to the wants of agriculture, with a wonderfully extensive and practical familiarity with the means of its improvement. Who can read, without lively admiration and hope, the more deliberate and formal addresses, and the spontaneous and effervescent speeches called forth on these occasions,



from such men as Judge Woodbury, Col. Wilder,\* Senator Pearce, General Chapman, Comptroller Whittlesey, Doctor Thompson, Holcomb, Davis, Bowie, Mr. Ingersoll, Mr. Webster, Mr. Everett, Mr. Winthrop, Mr. Upton, and many others of the intellectual elite of the land? Second only in his enviable character as friend and conservator of the internal harmony and industry of his country, the "Farmer of Ashland" is popularly known for his partiality for agriculture, and for his sagacious and provident notice and care when abroad, to introduce what seemed best calculated to push forward one of its most interesting features (to the west especially),—improvement in domestic animals. The same may be said of the great senator from Massachusetts. By both have all the best races of the most useful and improved animals been imported from England. The great senator from South Carolina, too, is well known throughout the country, as a remarkably successful cultivator of the soil generally, and of one of the most distinguishing and valuable staples at this day known in the world. It is notorious that he has carried into his agricultural industry and management, the same original, clear, and vigorous power of mind, combined with the same principles of economy and humanity, that have ever characterized his intellectual and social disposition and habits.

The invention we have heard ascribed to Mr. Calhoun, of the means of preventing, or essentially arresting, by peculiar and cautious expedients in cultivation, the rapid deterioration of southern plantations, to which they are particularly exposed from the topography of the country, the lightness of the soil, and the heaviness of sudden falls of rain; is in itself better fitted to confer solid distinction than all the chaplets ever won in fields of mere party warfare. In contemplation of all these auspicious signs for the plough, one is yet, nay, the more prompted to inquire, how it is that none of these gentlemen all powerful in talents, as many of them are in position, are seen to move for the adoption by the government, of all the means within its competency to diffuse throughout the country, among the rising generation, a knowledge of those principles of science and of mechanical philosophy and structures, by which labour, capital, and muscle, might be quite as much energized and economized in their application to the plough, as it is on all sides admitted they can be and have been, in their application by the government to the use of the cannon and the sword? Is not their inaction (we mean no personal application), to be attributed to the fact, that their constituents, the cultivators of the soil themselves, do not prompt them to move? Is it not, shame to say, because it is so much easier to agitate the people and their legislatures, about the affairs of foreign governments, and of States with which they have no legitimate concern, than it is to move them in relation to measures that bear directly on the industry and prosperity of every man, woman and child in the land!

We have here very briefly, and we hope not offensively glanced at some

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\* The Boston papers announce the election of Col. WILDER, as *President of the Senate of Massachusetts*, and, (what we should look for of course, knowing him as we do,) an appropriate speech from him in acknowledgment of the honour. By whatever other good titles, he may have gained that high distinction, high when we regard the character of the body and the State, we readily permit ourselves to infer, that his enlightened devotion and services to *Agriculture and Horticulture*, have contributed to procure for him laurels, that we are sure will be as well worn, as they have been deservedly won. It is but in the natural course and fitness of things, that those who prove themselves faithful and efficient in smaller, should be placed in larger, and yet larger spheres of responsibility and power. In military affairs, men have only to live, and rise by *force of law*. In civil life, it should be the care, as it is the interest of the people, that *merit* should not fail of its force to the same end.

of the ample reasons we have to know, that in Congress there is no deficiency, of zeal individually, or of knowledge, of the wants of agriculture—politically and practically—and we care, Heaven knows, for its political, only as that bears on its practical interests.

In our last number of "The Plough, the Loom, and the Anvil," we gave some valuable papers on the subject of *peat* not only as a sanitary deodorizer of offensive malarial in cities, but as a fertilizer in itself and invaluable as a compound in the preparation of the richest of all manures. Among these papers was one of a highly instructive and practical character from the Hon. D. P. King, a member of Congress from Massachusetts. Since then we have been much gratified with the perusal of an address, referred to at the head of these remarks, delivered by another member of the same body. With most of the sentiments avowed in it, our own so nearly correspond, that we have asked leave to make a few extracts and to them have taken the liberty to append a few notes.

Here are, already, promising and pregnant signs of that advantage in the way of obtaining information from intercourse, afforded by a residence in Washington, with honourable members from all parts of the Union—information of a character to befit the pages of a journal, which it is our aim and chief pride, to make at once useful and *national*.

#### WOOL.

On the subject of wool Mr. Clarke remarked:—

"To every farmer, the rapid decrease in the price of wool, and of course in the number and value of sheep, is a subject of alarm and deep regret. Time was when the breeding of sheep and growing of wool was protected by adequate and wise laws and the business flourished.

"The destruction of that great agricultural interest is attributable to our own unwise laws. There is no meat so cheap, and at certain seasons of the year so healthy as mutton, no tallow so good or so easily grown as that of the sheep. There is no domestic animal that cleans and fertilizes the land on which it pastures so well and so fast.\* None that will thrive on such rough and forbidding fields. There is hardly a shrub or plant but yields to the strong digestive powers of the sheep. There are many rough tracts of land now valuable that would become comparatively worthless if the growing of sheep were abandoned. Under the influence of bad laws this useful animal is rapidly decreasing, and year after year, fine wool that is intrinsically worth sixty cents, and which it has cost the farmer that much to grow, is sold

\* "Sheep's dung," says Johnston, "is a rich dry manure, which ferments more readily than that of the cow, but less so than that of the horse. A specimen examined by Zierl consisted of

Water	68.0	per cent.
Animal and vegetable matter	19.3	"
Saline matter or ash	12.7	"

100.

"The food of the sheep," he says, "is more finely masticated than that of the cow, and its dung contains a little less water, and is richer in nitrogen. When land is pastured by sheep, their manure is more evenly spread over the field, and at the same time trodden in, especially where they are employed to feed crops off of arable land."

It has been by eating off their crops with sheep that the light soils of Norfolk, England, have been made to produce heavy crops of wheat and especially fine samples of barley.

The following table exhibits the average proportions of water, and of solid organic, and inorganic matters, which, according to Johnston, are contained in the urine of man,

for thirty cents.\* Foreign wool, which under our unwise laws, is admitted into this country almost duty free, governs the market, and the wool grower of this region, where we are obliged to fodder half the year, and where we pay for a day's work a dollar, is obliged to compete with the foreign wool grower, who foddors only two months† in the year, and pays perhaps twenty cents a

and of our most useful domestic animals in their healthy state, and the average quantity voided by each in a day.

Urine of	Water in 1000 parts.	Solid matter in 1000 parts			Average quantity voided in 24 hours.
		Organic.	Inorganic.	Total.	
Man*	930 to 970	22 to 52	8 to 18	30 to 70	3 lbs.
Horse	886 to 940	27 to 79	33 to 45	60 to 124	3 ?
Cow	880 to 930	50 to 70	20 to 47	70 to 120	40†
Sheep	930 to 960	28 to 50	12 to 20	40 to 70	?
Pig	926 to 983	9 to 56	9 to 18	18 to 47	?

\* The following were the prices which prevailed as quoted in the January number of "The Plough, the Loom, and the Anvil," from the Dry Goods Reporter, New York.

Saxony Fleece, extra fine . . .	42 a 48
Full blood, mixed . . .	38 a 40
$\frac{1}{2}$ and $\frac{3}{4}$ blood do . . .	33 a 36
Common and quarter blood . . .	30 a 32
No. 1 Wool City Pulled . . .	00 a 30
Do Country do . . .	00 a 32
Sup. Pulled Wool . . .	00 a 35

*Edit. P. L. & A.*

† The question has been raised, how far it may be expedient for the wool growers themselves to favour the admission of wool of a certain low grade at a low rate of duty, but it is to be apprehended that a door has been opened for frauds to creep in that even the closest doors and the thickest walls can hardly keep out. For a particular exhibit of the quantity and value of wool, imported into the United States from 1821 to 1849, the reader is referred to the last number of this journal, page 420. From 384,333 pounds of the value of \$93,829 in 1821, the importation for 1849 had gone up to 17,869,022 pounds, valued at \$1,177,347. This subject will continue to engage our particular attention, as will all the great branches of manufactures that are essentially connected with great branches of agriculture. He, in fact, who wishes to understand and promote the one, must look to the growth and prosperity of the other. They are not only harmonious but identical.—*Edit. P. L. & A.*

\* Alfred Bequerell. See Thompson's Animal Chemistry, page 477. It is to be observed that the proportions of water and of solid matter in urine, vary with the food, and with a great variety of circumstances.

† A milk cow voids less than this in a proportion which varies with the quantity of milk she gives. Bouissaingault found a milk cow to yield daily 18 pounds of urine and 19 pounds of milk.

The best chapter within our knowledge on the proportion of manure to the quantity of fodder and the number of cattle, is to be found in that most valuable of all single volumes on agriculture, with which we are acquainted, the English copy of which sells when imported for \$10 and which we can give for \$2, "*Von Thaer's Principles of Agriculture.*" Thirty pages of our edition are given to this subject. He quotes a paper by a very talented agriculturist who makes the following statement of the proportion of manure furnished by different animals.

If the dung of an ox or cow amounts to . . .	180
That of a horse amounts to . . .	170
That of a sheep to . . .	19
And of a hog to . . .	18

*Editor P. L. & A.*



day for haying and harvesting.\* The tariff is cunningly devised, it seems to give protection but in fact gives comparatively none. The foreign trade in wool is essentially free, and this great agricultural interest is thereby measurably destroyed. The duty upon imported wool is thirty per cent. on its foreign valuation. By various cunning devices this foreign valuation is mightily degraded. This is sometimes done by mixing dirt with the wool, sometimes a great manufacturing establishment sends its agent abroad to buy wool at such prices as he can, and then a second agent to buy of the first at some low price agreed on, so that most of the imported wool is represented at our Custom-house to have cost less than seven cents per pound, probably not over six. The tax upon a pound of wool which ought to be at least ten cents is reduced to less than two, and the protection is a mere mockery. It does not amount to over twenty-five dollars per annum on a flock of five-hundred sheep.

"Thus the American wool grower is obliged to work on equal terms with the Peon of Mexico, and the semi-savage of Africa, or abandon this most useful branch of agriculture. 'Tis not the wool grower alone that is injured, constrained to abandon his employment, he becomes a competitor with the grain grower or the dairy-man, and degrades the value of their productions by the well-known rules of supply and demand. Under this Tariff the quantity of wool used in the United States has increased, and the price of the wool has decreased, so much for a Tariff made nominally to protect farmers. If the agricultural interest should ever again be cursed by such protection as this, it is hoped that the law may receive its right name; a Tariff for the destruction of American Sheep. The Plough is of no party, and a tariff for protection of every branch of American industry is above all party, shame to an American statesman who uses a tariff for the protection of American industry as a hobby to ride on or as a target to fire at."†

#### IMMIGRATION.

On the subject of the immigration of foreigners, the gentleman discourses with sound sense and excellent taste. "The high price of labour," he says, "of which perhaps we are too apt to complain, is the necessary result of those natural laws which govern everything. We have a thousand things to do which the inhabitant of densely populated Europe finds done to his hand. There the forests are cleared off, the stumps are rotted out centuries ago, the bridge is built—the road and canal constructed—the school-house—the church—the public edifices—are erected, the swamp is drained, the stones are picked up and laid into wall, and the orchard is set and in full bearing. Here, on the contrary, everything remains to be done—the world is all before us, and no other people could encounter so bravely the great task of subduing a new world. To us and our enterprise, industry and ingenuity, this great work is entrusted, and full gallantly have we begun our task. If your population is too scanty—if

\* What a hint to holders of large bodies of southern lands, in the mountains of Virginia, the Carolinas, Georgia, Texas, &c. But how vain to urge it. One man may lead a horse to drink but all the men in the world can't force him to drink when there.—*Edit. P. L. & A.*

† Would that this could be made good; but the fact is that the extension of sheep husbandry in the south has two difficulties to contend with. First liability to be killed by the dogs of worthless vagabonds who have no politics, and when you make appeal to the owners of flocks, every man of substance sufficient to own a flock of sheep, is unfortunately a partisan politician, who would sooner sacrifice his flock than endanger the ascendancy of his party, by measures that would restrict vagabonds from going at large with any number of vagabond dogs. The legislature of Maryland is in session. The liability of sheep to be destroyed by dogs, is universally admitted to be a crying evil—an immense loss to the State. We shall see what will be done to visit penalties on the owners of all such dogs—yes, *nous verrons!*—*Edit. P. L. & A.*

despite the thousand labour-saving machines which your ingenuity has invented, labour bears too high a price—call on the foreigner to come to your aid, to share your toils, to divide your labour, and enjoy your free and equal laws.\* Receive him kindly—remember that his forefathers and yours were brethren, that your forefathers were once foreigners, and that time was, when the only 'native American' was a wild Indian. Let ignorance, prejudice and exclusiveness carp and criticize and find fault as they may. The immigrants coming from the teeming millions of Europe, are immeasurably the most valuable importations we make.†

"Let others visit the shores of benighted Africa and dispoil her of her children, and settle with their consciences a traffic in blood. Be ours the more humane duty of providing a home and employment and food and education and liberty—to the sons of our forefathers."

### FLAX CULTURE AND FLAXSEED.

Washington, 10th Feb. 1850.

To the Hon. C. E. Clarke.

DEAR SIR:—Some years since, on an equestrian excursion in your State, I remember to have seen, what seemed to me to be an unusually wide breadth of flax growing, and I was surprised at being told by the owner, that it was done with a view exclusively, to the seed; that no use was intended to be made of the fibre. This, with other circumstances, led me to suppose that the seed may be more extensively employed as food for domestic animals in New York, than in States with whose husbandry personal observation has made me more familiar. Your known fondness for agriculture prompts me to suppose, that you may possess information on that point; and as all English agricultural annals indicate that flaxseed, either in the form of cake, after the expression of the oil, or in substance in the form of jelly, is in great use and esteem there, particularly with a view to the value it imparts to the animal's excretions, I trust you will excuse me for inquiring for such practical facts on the subject, as may be within your knowledge, and particularly how flaxseed in any form is valued in comparison with Indian corn and other grains. The national spread and character of "The Plough, the Loom, and the Anvil," which you so liberally patronize, makes it desirable to obtain for its patrons in each State, whatever there may be peculiar, practical, and worthy of being known and followed in others. In haste, but very respectfully,

Your obedient servant,

J. S. SKINNER.

HOUSE OF REPRESENTATIVES, 11th February, 1850.

DEAR SIR:—When wheat was 75 cents, corn 37½ cents, barley 31 cents, and oats 18 cents per bushel, it was thought to be good economy to raise flax for the seed alone, but the seed was not extensively used for feed; it was, and is generally sent to the oil mill, where it always is worth \$1 and often \$1.25 per bushel; ten bushels per acre is a common yield. When it is cultivated for seed alone it is sowed very thin, and the stem is cradled (not pulled). Flax is often sowed with barley, and of course harvested and threshed with it, and when the grain is winnowed, the flaxseed is found in the box of the fanning mill. Thus, without much extra labour, and without much diminution of the crop of barley, eight bushels per acre of flaxseed are added to the crop.

There is a larger kind of flax than that in ordinary use. The stem is longer and coarser, and the seed is larger. The oil makers, with the view of increasing the quantity and improving the quality of the seed, introduced this kind of flax into Jefferson and Lewis counties, from Long Island; the Long Islanders imported it. Mr. Robbins, of Lewis county, used the flaxseed for feed, and insisted that there was more nutriment in the crop acre for acre than in the crop of corn, stalks and all. His mode of using it was

\* A country like ours can never be injured by the high price of labour. With high prices the power to consume advances, and with that wealth and population advance, and with them education and power, and the love of the peace and respect for justice.

—Edit. P. L. & A.

† A great truth, and none the less so that it is not universally seen or admitted. The number of immigrants to a country, constitutes at once the best sign and the best promoter of its prosperity. To elaborate this position is one of the aims of this journal.

—Edit. P. L. & A.

to put a small quantity in water and boil it, and a thick and very nutritious mucilage was obtained most useful for horses, horned cattle, and sheep. Swine will thrive on it, but it does not make good pork.

I think that American oil cake, is worth by the pound, a quarter more for horned cattle and sheep than corn meal.

We do not press out as much oil as the English. The English often grind up and press over again American oil cake, if it arrives in good order, that is, not musty or mouldy, and hence it is, that thin oil cakes command a higher price than thick, because they are usually in better order.

The best way to use oil cake is to sprinkle it on chaff, cut straw, or ground cobs. Independent of its nutritious qualities, it is a very healthy aperient, and has a direct influence on the skin and hair of the animal that feeds on it.

I write without ceremony, and hope my want of time may form an excuse for imperfection in matter and manner.

C. E. C.

To J. S. SKINNER,

Editor of "The Plough, the Loom, and the Anvil"—Washington.

It will be seen by the reader, that in his very prompt and obliging reply, Mr. Clarke does not advert to the additional value imparted by the flaxseed, or its oil, to the animal manure. But all English authorities abound in references to its importance in that respect. The English farmer, paying a high price for oil cake—there generally called "cake"—is satisfied if he can get back *half* his outlay, in what it contributes to the animal; looking for the residue, to the additional value of the manure. We must here content ourselves with one extract from a work to which we shall be indebted for many facts illustrative of the value and permanency of various manures, as oil cake, guano, lime, bones, &c.; founded on the assured experience of men who we may believe pay close attention to these matters, seeing that they pay *rent* per annum, more than the average fee simple value of lands in many States of the Union.

The work to which we refer, is the evidence of many of the most experienced and intelligent farmers in England, before the "Agricultural Customs Committee." The reader will hardly require to be told, that in the language of English agriculture, "seeds" refers to grass crops of various kinds, as distinguished from grain, and roots, and hay.

The name of the witness ought to have appeared at one end or the other of his evidence.

"Is it generally considered that the expenditure for cake does not remunerate the farmer, so far as the improvement of the stock goes which consumes that cake? No; if we get half the benefit of the cake in the stock we are very well satisfied.

"You consider that if the beast is improved to the extent of half the value of the cake which he eats, you have done well? Yes.

"Do you reckon the straw for anything, that you have given the beasts? No.

"It is the practice, is not it, with many Lincolnshire farmers to keep beasts in the straw yard during the winter, eating straw and cake? Yes, to consume the straw to make manure; and unless the beasts had cake they would be reduced in value by living entirely upon the straw.

"And the manure would be worth less? Of course the manure would be worth a great deal less.

"In grazing farms with no arable land, and consequently no straw, which would be the value to the succeeding tenant of the quantity of oil-cake given to bullocks; what would be your opinion under such a state of things as that, of the value to the succeeding tenant? Equally as much, or probably rather more.

"With no straw to make any dung? Of course the dung that the cattle make, by having hay, would make better dung.

"Supposing the manure that we see in cow-houses and those places, made without straw, put out into the weather, how much of that would remain for the incoming tenant? I should think it would be in about the same proportion.

"Have you seen that state of things? No; I generally mix my manure altogether.

"Is not the quantity and quality of dung very small by having no straw mixed with it; do you think the improved quality would make it equal to the larger quantity produced by having straw mixed with it? Yes, I think it would.

"What is the average quantity which you would consider a fair average? For beasts of two or three years old it would be 50s. worth of cake, at the price it is now.



"For how many beasts? That depends upon the quantity of land.

"Taking your quantity to be 250 acres of turnips, and as you farm under this four-course system, of course you would have 250 acres of each sort? I have as many as 150 head of beasts.

"All forward cattle? No; some are out at grass.

"The forward beasts for the next year would be in the yard with cake? Yes.

"Do you winter the whole of your beasts yourself? Yes.

"Do you ever take in any beasts of other people? No.

"Is not that a common practice? Yes.

"Is it the practice that gentlemen having marsh land, so that they cannot find straw enough, give a certain portion of cake on another man's premises, he finding the straw gratuitously? Yes; the straw is generally given, and the attendance to the cattle.

"The owners of the beasts giving how much cake per head? Giving them perhaps 2 lbs., or 3 lbs., or 4 lbs., according to the size of the cattle. I have known as much as 4 lbs.; many of the Wold farms have no grass land; they have to buy cattle to eat the straw, or take in cattle being sent with them.

"Have you no grazing land to keep beasts? I generally sell my fresh beasts in the spring.

"Have you not heard of an agreement being made, that a man should send his cattle into the Lincolnshire tenant's yard, and that the tenant should not only find the straw, but pay for a portion of the cake eaten by the other man's beasts? Yes, I have heard of that.

"To increase the value of the manure? Yes.

"You have been asked with regard to the value of the oil-cake, when given alone to cattle and sheep; did you ever know cattle and sheep feed alone on that, without hay or straw? No.

"Do you think they could? No, I think not.

"As to the mode of feeding beasts by cake; you stated that cattle are fed in the yard with straw and oil-cake during the winter? Yes.

"And that with that oil-cake there is that other mixture which makes the mixed manure more valuable? Yes.

"How do you feed your sheep during the winter and the spring? We give the sheep cake when they are upon turnips in the winter, and we give them cake when they are upon seeds in the summer."

## ON THE CULTURE AND PREPARATION OF FLAX AND THE USE OF FLAXSEED.

CIRCUMSTANCES may occur, if they do not now exist, under which it may be expedient to cultivate *Flax*, as a remunerative crop in many of the States; and under all circumstances it is desirable to possess a knowledge of the opinions and experience of a people most conversant with the subject. Hence, it is deemed proper to preserve for those whom it may now or hereafter concern, the following exposition which was made at a "*Discussion on Flax Culture, at a late meeting of the Hereford Farmers' Club*" in England.

The information here presented seems to have been compiled for a school catechism for Irish children, and to have been corrected by a practical man. Altogether, it is well fitted to convey instruction to the practical cultivator, as well as knowledge which every reader may be pleased to possess. It will be seen to treat, not only of the cultivation, but of the preparation of the plant for manufacture, and of the various uses to which the seed may be applied. It appeared in the course of this discussion, that Mr. Day had grown 20 bushels of seed per acre, and did not consider flax "an exhausting crop;" while a Mr. Browne had 103 bushels of flaxseed off 4 acres, or 25 $\frac{3}{4}$  bushels to the acre, and did not find it "an exhausting crop." This, at the current price, 6s. 6d. per bushel (\$1.56), is 8l. 5s. 9d., or more than \$40, said to be a sum sufficient to pay rent, taxes, ploughing, pulling seed, steeping, and scutching the crop.

"As a consequence, the Flax fibre produced, taking it at Mr. McCullagh and Captain Larcom's average of Irish produce, 45 stones per acre, at 7s. per stone, would be value

for 15*l.* 15*s.*, as net profit per acre. Those authorities average the Flax crop in Ireland at 15*l.* per acre, not including the seed."

The general impression is, however, that *Flax* is a very exhausting crop; but that depends on circumstances, as explained by Dr. Kane, in his "Industrial Resources of Ireland," a work to which every liberal-minded agriculturist ought to treat himself for general as well as practical information. Mr. John Travers, of New Jersey, an enlightened manufacturer, and gentleman of very general information, is familiar with the difficulties and the wants of this country as to flax culture. He has, we believe, through the "American Institute," offered a premium to promote improvement in flax culture in some way. Can any one tell what has been the result? We should be glad to hear from him, the state, and the wants of this branch of husbandry and of manufacture in the United States. But alas! "you may call spirits from the vasty deep—but will they come when you call?"

*Flax, its Culture and Manufacture.*—Although flax is easy of growth, its quality depends very much on soil and fitness of situation. Low grounds, and those which have received deposits left by the occasional overflowing of rivers, or where water is found not very far from the surface, are deemed the most favourable situations for its culture. It is attributed to this last circumstance that Zealand produces the finest flax in Holland. Preparatory to the cultivation of this plant, it is necessary that the ground should be very deeply furrowed by the plough, and it should be reduced to a fine friable mould, by the repeated use of the harrow; 2½ or 2¾ bushels of seed are required for every acre of ground, and scattered broadcast. Care is taken to distribute the seed evenly, and the earth is then raked or lightly harrowed over. When flax is raised to be manufactured into cambric and fine lawn, the quantity of seed sown in the same space of ground should be 3 bushels, the plants growing near each other having a greater tendency to shoot up in long slender stalks; and, as the same number of fibres are usually found on each plant, these will of course be finer in proportion. When the crop grows short and branchy, it is esteemed more valuable for seed than for its fibrous bark, and then it is not gathered till the seeds are at full maturity. But if the stalks grow straight and long, then all care of the seed becomes a secondary consideration, and the flax is pulled at the most favourable period for obtaining good fibres. Experience has shown that when the bloom has just fallen, when the stalks begin to turn yellow, and before the leaves fall, the fibres are softer and stronger than if left standing until the seed is quite matured. It has been found from experience that *most seeds*, though not quite matured when gathered, ripen sufficiently after being pulled, provided they be not detached until dry from the parent plant, all the sap which this seed contains contributing towards further nourishing and perfecting the seed.

Is flax in general a remunerative crop in Ireland? Yes, when properly managed, it is not only highly remunerative to the farmer, but is of immense value as affording profitable employment to the poor in his neighbourhood.—To how many individuals would an acre of flax give constant employment for 12 months? If converted into cambric it would afford employment to 70; and if into embroidered lace, to 100.—Is flax grown on an extensive scale in England? No; its culture is much disregarded by British husbandmen, though it is stated that five millions of money are annually sent to foreign farmers for the purchase of foreign flax, and nearly three more for oil and seed.—Ought not this to encourage us to cultivate it more abundantly than we do? Yes, as we know we should never fail of finding ready markets and fair remunerative prices at Leeds, Manchester, Preston, and Liverpool, as well as in Belfast, where there are above 20 flax spinning mills; but at present we have not sufficient to supply our merchants, who are affording every encouragement to Irish flax growers and weavers.—Have they not for this purpose formed themselves into a society, in connection with many noblemen and gentlemen interested in the welfare of the Irish people? Yes; the society is called the

Belfast Flax Improvement Society, and it has already proved a great blessing, particularly to the industrious inhabitants of the north of Ireland.—What is the flax crop generally called in the north of Ireland? The rent-paying crop; because its cultivators are enabled by the profits to pay their rents without selling their corn crop.—Is it necessary that women should understand the proper cultivation and management of the flax crop? Yes, it is particularly so, and that children should also be made acquainted with it; because much of the care and attention necessary to bring it to perfection, both while growing, and after it is pulled, rests with them.—I should then wish you to tell me in what month or months the seed should be sown? The best time for sowing is from the last week in March to the middle of April. This is called early seed; the late is sown the beginning of May, and is called in the west of Ireland the seed plant, because the fibres are generally coarse, but the seed large and fat; this is from its being sown thin, about 2 bushels per acre.—Are the fibres of the flax injured by allowing the seed to ripen? Yes; if the flax be not pulled until the seed ripen, it becomes brittle and dry, from the effect of the sun, as the heat draws up the oil from the stem, and the greater part of the oil or juice becomes lodged in the seed, and, as a consequence, the flax cannot be oily as it should be to possess good spinning qualities.—What is the usual value of the seed of an acre of flax? Between 7*l.* and 8*l.* sterling.—What description of land is best suited to the growth of this plant? Deep friable loam, containing a large quantity of vegetable matter, mingled with sand. It should be freed of all weeds, and harrowed and rolled, until the surface looks like a well raked garden.—How is the flax seed sown? Always broadcast, never in drills, as the fibre would be valueless if so sown.—How much seed would an acre of ground require? If it is intended that the fibres should be fine, 2½ to 2¾ bushels are necessary, if not, 3 bushels; but if the object be to obtain a large quantity of seed, 2 bushels to the acre will be sufficient, as it will branch off in the top, and produce more than if thickly sown.—Is it necessary to keep the ground free from weeds while the plant is growing? All the larger weeds must be carefully removed, but the low growing ones, which the flax plant readily overtops, are of no consequence, and much injury is often done by attempting to pull them up.—How do we know when flax is ripe? We know that the plant is sufficiently ripe for the purpose of the spinner, and the seed for the oil-presser, when the stalk becomes yellow at the bottom, and the leaves begin to drop off; but if the seed is particularly required, in order to raise new crops, a small portion should be allowed to acquire full maturity, just what may be requisite for sowing purposes.—How do we ascertain when it has reached this state? By the bright brown color of the seeds, and the yellow shade of the whole stem.—Should flax growers always save the seed of their crops? Except when the fibres are required for the manufacture of fine lawn or lace; in that case the plants must be removed from the ground when quite green; but in every other, the seed may be allowed to ripen as stated above. How is a flax crop removed from the ground? It is pulled by handfuls in fine weather by women and children, and laid in small bundles, crossing each other obliquely, on the ground. When pulled (or at least all that is sufficiently ripe, for sometimes one part of a field ripens much sooner than another), these small bundles are collected into larger ones, and being tied near the seed end, are placed upright on the ground, with the roots downwards, in such a manner that the air may have free course through them.—Is it necessary to use any particular care in pulling flax? Yes; the plants should be caught near the bolls, which allows all the short stalks to escape, these are pulled afterwards, and made up into separate bundles.—How long should flax be allowed to remain in standing bundles or wind rows? Not more than two days, particularly if the weather is either very warm or very bright.—What is the flax manufacturer's next duty? To ripple through a sort of comb, which will not admit the capsule to pass. This comb is called a "ripple." See Dickson's rippling machines.—Is the seed of any worth or use, supposing it not sufficiently ripened for the purpose of raising new crops? Yes; it is of much value, as affording that description of oil so necessary to house painters, and with which we are all acquainted, under the name of "Linseed oil." The husk which remains after the process of expressing this oil has been completed is made into cake, and is sold for fattening cattle, while the inferior seed which has been rejected by the oil manufacturer, is made into flaxseed jelly.—What is flaxseed jelly? It is a nutritious food given to young cattle, and is thus prepared—1 quart of seed is steeped in 3 quarts of water for 48 hours, afterwards 3 quarts more are added, and the whole is boiled gently for two hours; when cool, it is mixed with oat or barley-meal, or bran, and given to the animals.—Suppose, however, that we neither wish to express oil from the seed, nor to feed the cattle with it, nor yet to save it for the purpose of raising new crops, is there still a necessity for rippling the plants? Yes; in order that the next process, which is water retting, may be performed without injury to the fibre.—How is it possible that by placing the seed in steep with the plants, we cause injury to the fibre? Because the seed is more readily acted on by the water than the stalks, consequently fermentation



sets in too rapidly, the water becomes putrid before the fibres are even partially disengaged from the glutinous substance which causes their adhesion; and when at length they are sufficiently freed from it to admit of their being removed from the steep, they are found to have assumed a yellowish-brown colour, and to possess little or no tenacity or strength.—Is the process of water-retting necessary? Yes. It is in order to facilitate the separation of the fibres from the bark, which can only be accomplished by water-retting, or by submitting the plants for a long period to the dew, the air, and the rain. This latter method is called dew-retting, and is very little practiced, except in Dorsetshire and Somersetshire, where they grow flax more for the seed than for fine fibre, as they are not aware of the method of producing fine fibre.—Is water-retting an important process? Yes, it is most important; and yet it is often most negligently performed in Ireland. The Dutch call the knowledge of it “science,” and teach it by means of seven rules.—Then with them it must be a work of great labour, encumbered with difficulties; is it not so? No, it is quite the contrary; for their rules are so simple that any young person may understand and practice every one of them.—Which is the first rule? The first is to prepare, at least a fortnight before the flax has been pulled, two ponds of soft, clear, standing water, perfectly free from all mineral impurities, and from springs at the bottom or sides.—How are such ponds to be obtained? By forming canals and pits near a stream or river, and avoiding the near neighbourhood of springs, which are usually impregnated with iron and other mineral substances, and therefore cause stains or stripes in the flax.—Name the second rule. Carefully to remove all the bolls from the stalks.—What is the third? To see that the flax is made up in small bundles.—What is the fourth? To sort the bundles according to the length of the stalks, in order that the short ones may not be over-retted by being placed in the same pond with those of more mature growth.—What is the fifth rule? To lay carefully, in straight and regular layers, the long bundles in one pond, and the short ones in another.—What is the sixth? To cover the ponds with sods of soft peat moss and plank, so as to keep the flax from rising to the surface, and also to exclude from it as much as possible air and light.—Name the seventh. To watch carefully the subsidence of fermentation, which generally occurs about the tenth or twelfth day, and afterwards to examine the plants three or four times daily, in order to discover as soon as possible when the textile filaments are easily separable from the boon, or woody parts. The moment they are found to be so, the flax should be removed, as a few hours’ over-retting often destroys the strength of the fibre.—Is water-retting complete when the flax is removed from the pond? Yes; and then the next process, which is that of grassing, succeeds.—How is flax grassed? By spreading it as thinly as possible, in perfectly straight lengths, on clean lea or newly mown meadow. It should be spread as soon as taken out of the water, unless there is very heavy rain falling; light rain will not injure it.—How many days does the process of grassing occupy? Generally five or six days. If found to be perfectly dry in that time, and the fibres spring from the wood like a bow and string, it should be carefully gathered into bundles, kept all straight, and brought to the break.—What is a break? See Dickson’s portable mill for breaking and scutching Flax, 35 and 36 Skinner Street, Bishopsgate, London.—What is the next operation? That of scutching, which is accomplished by placing the broken flax in small handfuls over what is termed the scutching stalk, the man who operates holding one end of the handfuls (which is called a streake), whilst the other end or half the streake is so beat by the rapid motion of the scutching swords, or handles in the mill, until the fibres are altogether cleansed from the hull, or wood, on which they are produced. By the mill process of scutching or dressing, a man can clean from 5 to 6 stones, or 70 to 80 lbs. per day, whilst a man cannot clean by the old system of scutching by hand, more flax than from 10 to 12 lbs. per day; and flax that would sell from 7s. per stone, when scutched by the mill, would not sell for more than 5s. 9d., to 6s. per stone, if scutched by hand. See Belfast market note; for the process of breaking and scutching flax, see Dickson’s portable mills at work on the farms of T. P. Browne, Esq., Salperton, Andoversford, Gloucestershire, and T. H. S. Sotheron, Esq., M. P., Devizes.—The greater portion of the above statement on “Flax, its Culture and Manufacture,” has been compiled and arranged, as a catechism for the children of the Irish peasantry, by a Mrs. Mooney: but like all works collected from theoretical writings, many errors were set forth, and I found considerable alterations and corrections necessary to be made, to prevent disappointment to those that may look to such as a guide in cultivating the plant.

Having described the advantage of machinery to dress or scutch Flax, compared with hand labour, and having asserted that mill-scutched flax will sell from 20 to 25 per cent. higher than hand-scutched flax, a few observations on the cause may be useful. The flax fibre being, like our straw, of a tubular form, contains a portion of oil, which the quick revolutions of the scutching swords or handles when driven by machinery, bring out, and not only makes the flax more soft and appear to the eye superior to similar

flax when scutched by the hand, but the oily matter being, from the heat created by friction, completely disseminated through the handful or streak then in course of scutching, makes the fibres all adhesive and damp alike, which, when thrown over the hackle to prepare it for spinning, splits into many cobweb-like fibres, and it is then only that its value is known and appreciated by the spinner. The dressing or scutching by hand cannot be done so as to bring out this oily matter, as the slow stroke of the arm must ever fail to create friction, and, as a consequence, hand-dressed flax is husky and dry, and will not split on the hackle, but will fly off the teeth from being dry and open, and will run to waste. This is so well known in the north of Ireland, that many follow the trade of purchasing hand-scutched flax in Ballyhay and other markets, and, after having it re-dressed in the scutching mills, sell it very frequently at 1s. to 1s. 6d. per stone profit. As these are facts that Mr. Rowan is likely to be aware of, from his visit to Belfast, it might be worth the consideration of those who have corn mills in Herefordshire to erect machinery for the purpose of scutching flax, as such would encourage the growth of the plant and be found remunerative; the same power may be made to answer for scutching flax when grinding corn can be dispensed with, and as the prices of flax, from the Belfast *Northern Whig*, of the 20th ult., will prove my assertion, I beg to hand the market note of that date. "Flax: The markets are pretty well supplied, with a fair demand at our quotations. Hand-scutched, inferior, per 16 lbs., 4s. 4d. to 4s. 7d.; middling, 4s. 9d. to 5s. 3d.; fine, 5s. 4d. to 6s. Mill-scutched, low quality, 5s. 3d. to 5s. 9d.; middling, 6s. to 6s. 9d.; best ditto, 7s. to 7s. 9d.; fine, 8s. to 8s. 9d." As Mr. Rowan alluded to "exaggerated statements as likely to have a tendency to destroy the prospects of those that may be induced to cultivate the plant, by a less profit being yielded, than they had been taught to expect," I beg, in conclusion, to say that I quite agree with him on that point, at the same time I consider that when scientific growers make a hit, such as I shall draw attention to, the fact should be made known, that others who have the same opportunity may go and do likewise.

*Extraordinary Produce.*—Extract from the *Armagh Guardian*. At our market on last Tuesday, Mr. George Lester, of Bellarra, disposed of 67 stones of flax, the produce of one band of Riga seed; the flax was prepared at Mr. George Henry's mills, and realized its owner the handsome sum of 32l. 3s. 6d., having been sold at 10s. 6d. per stone. This and similar facts should stimulate the farmers to pay more attention to so profitable a crop. I will suffer the disgrace of being found in error, if I cannot bring forward a dozen such growers as Mr. George Lester.—*J. Hill Dickson, Phoenix Hotel, D'Olier street, Dublin, Nov. 2.*

### LINSEED OIL MILLS.

THE following will come in here appropriately. It is one of a series of valuable papers, from the "*Cincinnati Price Current*," on *Western Manufactures*; more of which we hope to have the pleasure to publish.

### LINSEED OIL MILLS.

The business of manufacturing linseed oil in the west, is one which has increased considerably within a few years; but it cannot be said to have prospered in equal proportion. English oil has ever successfully competed with American in the eastern markets, and profitable shipments have been seldom made from the west: indeed, prices generally have been as high, and, not unfrequently, higher, in Cincinnati than in New York. But the consumption in the west has steadily increased, so that now she has within herself a market for the quantity produced: but the latter might be greatly increased, without adding to the number of mills, as each has a capacity for making a much greater quantity than is annually turned out. There is still another difficulty that western, and, we may say, American manufacturers have had to contend with, viz.: the difficulty of procuring seed. The farmers have, heretofore, made little or no use of the lint or flax, and the seed, alone, has been considered an unprofitable crop; and every effort on the part of manufacturers to induce its cultivation proved in only a small degree successful. There is a prospect now, however, that this difficulty will be removed, by the creation of a market for the lint or flax. Within the last few months, an establishment

has been erected, on the Miami Canal, near Dayton, for the purpose of manufacturing the lint into coarse linen, such as crash, burlaps, &c., in which operations have already been commenced. This, to be sure, is but as "a drop in the bucket" in comparison with the supplies of the raw material that would seek a market, if one was to be found; but we think this little manufactory, "solitary and alone" though it is, may be regarded as the beginning of a great business, that will supply, to a great extent, the home demand for every description of linen goods. There is within ourselves the material (and who will deny that we have the enterprise?) to commence and carry on successfully, this, as well as any other branch of manufactures. We must, though wandering somewhat from our subject, present a few statistics, to show what a large amount of money is annually paid to foreign countries for linseed oil and linen goods. During the year, ending June 30, 1848, there were imported into the United States, of the manufactures of flax as follows:—

Linens, bleached or unbleached . . . . .	\$6,012,197
Hosiery, and articles made on frames . . . . .	1,998
Articles, tamboured or embroidered . . . . .	21,018
Not specified . . . . .	589,435
Total . . . . .	\$6,624,648

The amount and value of linseed oil imported, during the same period, were as follows:—

Where from.	Gallons.	Value.
Hanse Towns . . . . .	4,314	2,216
Holland . . . . .	9,966	5,618
Belgium . . . . .	35,447	16,777
England . . . . .	986,241	459,407
British America . . . . .	43	23
Sweden and Norway . . . . .	100	60
Total . . . . .	1,036,111	\$484,101

Thus it is seen that the value, *ad valorem*, of the manufacturers of flax and linseed oil, imported into the United States, was, in one year, \$7,108,749.

But we must return to our subject. The farmers, as soon as they find a market for the lint, will give more attention to its cultivation, and thereby increase the quantity of seed; the result of which will be a reduction in prices that will enable American manufacturers to compete more successfully with those of foreign countries, and, ultimately, drive the latter entirely out of the market.

The demand for, and price of oil cake is also greatly in favour of Europe. The price of this article, in Liverpool, is usually about £7 sterling per ton; while here the average price has not been over \$10 per ton. There is, however, a home demand springing up for this article, in the more thickly settled portions of the eastern States; and there is a fair prospect that this demand will steadily increase, until our manufacturers will in this respect, also, have advantages that they do not now enjoy.

There are in the whole west 12 mills; as follows:—

Cincinnati . . . . .	4	Zanesville . . . . .	1
Dayton . . . . .	3	Springfield . . . . .	1
Piqua . . . . .	1	St. Louis . . . . .	1
Madison . . . . .			1

The actual production of these mills, as previously intimated, falls considerably short of their capacity for manufacturing. The Cincinnati mills consumed, during the last year, 93,000 bushels of seed, and produced 186,000 gallons of oil, and 2,000 tons of cake. These mills have the capacity for



pressing 347,500 bushels of seed per year, which would produce about 600,000 gallons of oil.

The three mills in Dayton consumed, last year, 100,000 bushels of seed, produced 200,000 gallons of oil and 2250 tons of oil cake. These mills are now capable of crushing 200,000 bushels of seed, annually, and producing from 375,000 to 400,000 gallons of oil, and 2400 tons of cake.

The mill in Springfield, Ohio, consumed, during the year, 11,000 bushels of seed, and made 23,000 gallons of oil.

The St. Louis mill crushed 25,000 bushels of seed, and produced 49,500 gallons of oil.

The mills in Zanesville, Madison, and Piqua are small, and do not consume, together, over 30,000 bushels per year. We will here give, in tabular form, a recapitulation of the productions of the several mills:—

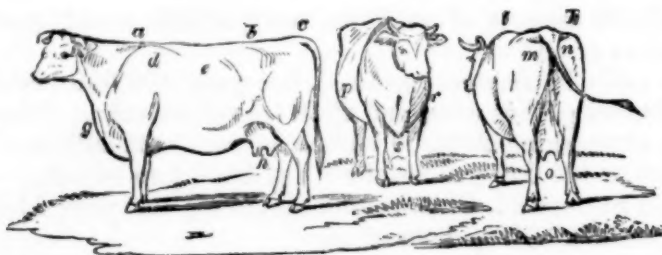
	Bushels Seed.	Gallons Oil.	Tons Cake.
Cincinnati . . . . .	93,000	186,000	2,000
Dayton . . . . .	100,000	200,000	2,250
Springfield . . . . .	11,000	23,000	223
St. Louis . . . . .	25,000	49,500	562
Zanesville, Madison, and Piqua . . . . .	30,000	60,000	660
Total . . . . .	259,000	518,500	5,695

The production of the current year, owing to a deficiency of seed, will fall considerably short of the above amount. We have letters from the proprietors of all the mills in Dayton, and some of them do not expect to get over one-half the amount of seed consumed last year. The consequence is, the prices of seed and oil are now higher than last year, and must so continue, until the next crop of seed reaches market. The average price of seed in this market, last year, was 108c. per bushel; this year it will average 125c. The average price of oil, last year, was 54½c. per gallon; this year it will be 65c.

The oil manufactured in Dayton is sold principally in this market. Some lots are shipped to Toledo, Detroit, Cleaveland, Buffalo, New York, and Boston. The cake has been mostly sold for the European market, until this season, when a considerable quantity of that made at Dayton and Cincinnati was disposed of to oil manufacturers at Troy, N. Y., and Trenton, N. J., by whom it was ground and sold for feed.

The Dayton mills are owned by W. & F. C. Estabrook, Parrott & Clegg, and F. Gebhart & Co.; Cincinnati, Guthrie & Co., N. C. McLean, J. Elstner and E. Davis; St. Louis, H. T. Blow; Springfield, Smith & Boucher.

*Labourers' Cottages.*—The Royal English Agricultural Society has lately given a prize of 50*l.* to Mr. Goddard, architect in Lincoln, for the plan and cost of construction of a pair of cottages for agricultural labourers. The ground floor contains only one living room and a scullery, with a pantry and cellar. The author reckons one living room to be most consonant to the “wants and means” of the labourer, and for preventing any letting off for the accommodation of lodgers or another family. The means of labourers are small enough in all conscience, but his wants are those of common humanity. Mr. Goddard’s plan improves nothing upon the pinfold rooms of Tweedside and Northumberland, where a family of a number of ages and sexes, being huddled together, forms a blot of no small magnitude on the social system of those celebrated counties.



## SCHLESWIG AND HOLSTEIN DAIRY MANAGEMENT.

I SHALL be glad if you will allow the accompanying description of the routine of management of an Holstein dairy to appear in your *Gazette*, to give the English dairymen an idea of the exertions made by foreigners to compete with them in the London market.

The pride and boast of the Holsteiner is his dairy; and as Holstein butter may well claim to be the best in the world, the following sketch of the management by which the dairy in that country is more especially distinguished, may not prove uninteresting nor useless to the English farmer.

A dairy consisting of 200 cows gives employment to the following number of persons; a dairy-man, a dairy-maid, a cook, a cooper, two cow-herds, an odd man, a cheese-maid, and ten dairy-girls. The dairyman's duty involves a general charge of the cattle, the calves, and the swine; he is responsible for their being regularly and suitably fed; that the cow-herds do their duty; that hours of milking, &c., are punctually adhered to; and that everything and every person is in proper place and keeping. He must pay strict attention that the cows are milked thoroughly out, on which so much depends. The dairymaid has the superintendence of every work which belongs to the treatment of milk, butter, and cheese, from the moment that the milk is brought to the dairy room, and is answerable for the cleanliness of the whole dairy house; she is also housekeeper, and orders the extra work for the girls not included in the dairy, as gardening in summer, and spinning in winter. Her own particular work in the dairy is to skim the milk, to manage the process of converting the cream into butter, to beat the butter as will be afterwards described, to superintend the cheese making, to put in the proper quantity of rennet and salt, and to look after the cleanliness of the dairy utensils. The cheese-maid attends to the manipulation of cheese making, and has to measure the fresh milk as it is put into the tubs, to clean out the dairy room, and to rub dry and turn the cheeses. The ten dairy girls have each to milk from 16 to 18 cows, to do all the work in cleaning the dairy utensils and the dairy house, and either to spin or work in the garden, or any other work which is ordered by the dairy-maid. The cooper repairs and renews the dairy utensils, and makes the casks to contain the butter for sale; he assists at the milking, and takes the duties of the dairy-man, in case of illness, as far as the care of the cows and pigs. The odd man milks his number of cows, feeds the pigs, and carries the skim milk out of the dairy room into the cheese tub. When the cows are in the stables, these two last persons assist the dairy-man, with the help of the cow-herds, to give the hay and corn to the cows. One cow-herd is kept for each 100 cows, their duty being to watch the cows as long as they are in pastures, and to collect them together at the milking times. In the winter, when the cows are housed, they have to give them straw and water, and to make up the beds four times a day, so that the cows always have clean straw to lie down upon. The dung is removed by a man whose time is fully occupied by that particular duty.

The routine of dairy work is regulated to follow in 12 hours, to leave ex-

actly the space of time between each operation with the milk, cream, and butter. The morning work commences in summer at two o'clock, by the establishment being called by the girl whose duty for the week has been to remain up the night, preparing the hot water required for the first operations. On entering the dairy room, the dairy-maid, with the assistance of the cheese-maid and two of the handiest of the girls, skims the milk, which has stood in the tubs 36 hours; it is carried by the odd man into the cheese tub; the milk tubs, as they are emptied, are washed and cleaned in the following manner. The tubs, made of oak wood, painted red inside, are placed upon the floor of the ante-cellar, and the girls are divided into two parties, so that two tubs at a time are undergoing the same process of cleaning. The first girl puts a ladle of boiling water into each of two tubs; next two girls follow with small birch scrubbers, to remove the particles of adhering cream or milk, which is emptied in a pail for the pigs; the fourth and fifth girls, with boiling water and a hard round brush made of pigs' bristles, with which every hair's breadth is thoroughly scrubbed and polished, to remove all acidity. The sixth and seventh girls wash the outsides and bottoms of the tubs with cold water, and dash the insides well with cold water. The eighth girl gives them the final washing in a cold bath, and places them on a heap, when they are examined by the dairy-maid, and put out in the air to dry. During the time the dairy-maid is examining the tubs, the cheese-maid washes the floor in the milk cellar upon which the tubs stood. As soon as the girls have finished the cleaning of the tubs, they carry the skimmed milk which has been heated into the cheese tub, to give the proper temperature to the whole before the dairy-maid adds the rennet and colouring. These preliminary operations being ended, the dairy girls dress, and having partaken of a piece of bread and butter, at 4 o'clock proceed with the men to milk the cows. The dairy-maid now commences the churning operations, which must be accomplished in not less than 50 or more than 60 minutes, by the power of either steam or horses. While the churn is in motion, she has time to beat the butter made the previous day, and to put it into casks, all attention being paid that no interstice shall remain either between the layers of butter or the sides of the casks. The cheese-maid is now occupied in cheese making. At half-past 6, the milkers have finished milking; the milk is conveyed in pails swung upon bars stretched across a wagon, to the dairy house, and carried into the cellar by the girls, where it is immediately strained through a hair sieve into the tubs, each containing a measured quantity; this duty is performed by the cheese-maid, who must have finished, with the assistance of the cook, cheese-making on the return of the milkers.

The girls then carry the tubs placed out to air into the cellar, where they remain 12 hours. They then go to breakfast. After breakfast they wash out the milk pails and the conveyance pails, the churn, &c., and all other utensils that have been used that morning, and wash out the ante-cellar, and then they dress. At 9 o'clock they do any work unconnected with the dairy until 11 o'clock, when they are called to dinner; at 12 o'clock they lie down to repose until 2 o'clock, when the routine of work is repeated as above described, and completed at 7 o'clock, when they sup, and dispose of their time until 9 o'clock, at which hour they retire to bed.

The dairy-maid is by far the most important person in the establishment, as on her skill, attention, and diligence, depend in a great measure both the quantity and quality of the butter, and, by consequence, the profit of the produce. She must not only thoroughly understand but accurately observe the moment when the cream has attained the proper degree of acidity in the cream tub, also regard the temperature, adding either hot or cold water in the churning. The cream, when skimmed, is put into a large tub, where it generally



remains 24 hours, or until it has reached the first stage of fermentation before it is churned. When the butter "is come," it is placed in a trough and washed over with water as cold as possible, to separate the milk from the butter; the water is drawn off, and the butter is beaten so much that the milk is almost entirely pressed out; salt is then sprinkled upon it, and the mass loosely turned over, to give the salt time to extract any remaining particles of milk or moisture. After remaining 12 hours, the butter is again beaten, to squeeze out the brine, and after remaining 12 hours longer it is again beaten and placed in the casks.

Although it is an ascertained and undeniable fact that the quality of butter depends much upon the nature of the pasture, yet, to the untiring attention and experienced skill of the Holstein dairy farmer must in a great measure be ascribed the great reputation which his butter has of late years held in the London market, to which the greater part finds its way.

The qualities of first-rate butter are considered to be, first, a fine even yellow colour, neither pale nor orange tinted; second, a close waxy texture; third, a fresh fragrant perfume and a sweet kernelly taste; and fourth, good butter will, above all, be distinguished by keeping for a considerable time without acquiring a rancid flavour.—*R. S. Graham, Bulleigh, Nov. 12.*

#### THE GOVERNOR OF ALABAMA ON THE TRUE SOURCES OF AGRICULTURAL PROSPERITY.—HEAR HIM.

IN April, 1848, near two years ago, the question was discussed in the *FARMER'S LIBRARY*, which we were then conducting in New York, whether, "THE LOOM SHOULD COME TO THE COTTON, OR THE COTTON GO TO THE LOOM?" The question was suggested by the observation of the enlightened editor of the *New Orleans Commercial Bulletin*, that

"We buy in New Orleans, negro cotton goods, manufactured from one bale of cotton, for about the same sum that we receive for five bales of raw cotton; the other four bales being paid for the labour and profits which are divided between the ship owner, northern or English operatives, mill proprietors, agents and commission merchants; all of which would be retained at home, for the benefit of our citizens, had we cotton mills established here."

The essay to which we have referred, was widely published in the Southern papers, and it is no *self-flattery* to say, that no single article ever, or very rarely, proved more efficient in commanding the public attention, nor is it a violent presumption to assume that its effects have been manifesting themselves, not only in the altered tone of public sentiment and public men, but in practical measures to reverse that order of things, under which the American planter and farmer have lost, for a long series of years, the many millions which the English manufacturer and farmer have gained. In a word the loom is taking its place by the side of the plough. In that essay this proposition was laid down, and it has been, since the day of its first appearance, the aim and the business of "*The Plough, the Loom, and the Anvil*" (for the benefit of the first named) *to prove its truth, in every form, and by every means of illustration.*

It was there asserted that

"The labour of production is as valuable as that of conversion, and a just distribution of the proceeds would give to the planter, eight parts out of thirteen, leaving the remaining five for the persons employed in converting the cotton into cloth. We see, however, that the planter gives five bales for one, or a hundred for twenty; whereas if the distribution were in the just ratio of the labour employed, the planter should have sixty and the manufacturer forty."

This problem was sustained by an elaborate examination of the whole ques-

tion, as to the capital and labour embarked in the processes of production and manufacture, and the cost of transportation and exchange, and although it may be said to have "gone the rounds," nothing in the shape of argument, has been hazarded in the way of contradiction. In the meantime the investment of capital and labour in manufacturing industry, and the change of public opinion in favour of the diversification of employment, have been proceeding in a manner unparalleled in the industrial history of any country—it needs, in fact, only to be looked at with eyes divested of party spectacles, to excite universal amazement that we should ever have consented to send abroad for manufactures of which the raw materials are the natural growth of our own country, and of which so large a portion of the value is actually made up of the agricultural products of countries, whose labourers would deem it a luxury and a blessing, for them and their families, to *enjoy the offal of a southern plantation*.

As an evidence of the change of public opinion in favour of diverting labour "into all the channels in which it can be made useful and profitable, instead of employing the entire capital of our agriculturists in the production of a single staple," we submit the following extracts from the late message of Governor Collier of Alabama:—

"The inquiry is ever addressing itself to the inquisitive mind, why is it that Alabama, with her delightful climate, her healthfulness, her fertile soil of varied and almost universal adaptation, her abundant and unsurpassed water-power, her hills and vales for grazing and browsing, her untold acres of coal, iron, marble, and other minerals, does not furnish more striking evidences of prosperity and wealth? The question is easily answered. She does not avail herself of her vast resources—too large a portion of her population are unemployed—labour and the pursuits of capital are not sufficiently diversified. She grows cotton in abundance, at a profit below the statute rate of interest, while she yields to the manufacturer in Europe or New England, exclusive of the cost of transporting the raw material, a profit exceeding her own at least two hundred per cent. Small as is the income from this source, it is charged with the burthen of supplying all the necessary wants of the family, and most usually leaves but little to compensate the planter for his care and anxiety. The natural tendency of such a state of things is to impoverish the soil, to disincline us to improve and beautify our homes, to divert our attachments—to keep us ever on the inquiry for a purchaser, and a country where our wealth may be augmented with increased rapidity. A people thus living cannot enjoy that share of contentment and prosperity which Providence wills, and which is attainable with effort."

"We rely too exclusively upon our agriculture as a source of wealth, while we are exhausting our lands without an effort to reclaim them. But few form attachments for the soil, and only seek to make it most productive at the least cost and trouble. Such a life is unfriendly to social enjoyment and the cultivation of the sympathies—it prevents us from devoting the proper share of attention to the improvements of the intellectual powers and the elevation of the moral feelings.

"The remedy for these evils is to divert labour into all the channels in which it can be made useful and profitable, instead of employing the entire capital of our agriculturists in the production of a single staple—diminishing the price by an over supply. The producer, the manufacturer, and the consumer would then be placed in proximity to each other—each pursuit would stimulate and advance the other; and agriculture, which languishes in solitude, would become animate and prosperous. The concentration of industry and capital at home would arrest the propensity of our people to emigrate, and education in all the departments of knowledge would receive an impulse which would be felt and seen everywhere around us. The benefit of such a state of things is exemplified in many States of the Confederacy; but, perhaps, is more fully illustrated in Massachusetts and Rhode Island. These States take our cotton and wood, and manufacture them into cloths and ships, selling us the former at compensating prices, and with the latter become our carriers upon the ocean. Thus they grow rich in despite of the inhospitableness of climate and inaptitude of soil to grow a sufficiency of breadstuffs; while Alabama, with quite enough surplus labour to manufacture her cotton and produce all her provisions, without diminishing the product of the great staple, is comparatively poor. These States safely and successfully employ a banking capital of forty-five mil-

lions, and have millions always awaiting an opportunity for profitable investment; while the people of Alabama, with natural advantages greatly superior, are, the most of them, borrowers, without an active moneyed capital adequate to the supply of their own wants. If, in ice-bound New England, with a soil which, even in its virgin state, requires artificial stimulants, such are the results of well-directed enterprise and indomitable energy, what might be achieved in the South, if *in practice* we manifested the economy, the force and energy of our puritan brethren. With climate as mild as could be desired, the healthfulness of which is attested by the comparative bills of mortality; with a soil suited to the production of almost everything that vegetates—in short, with the elements of wealth scattered broadcast in our midst, ready to be made available by effort, the South has voluntarily yielded up her birth-right. Shall we not claim the heritage which Providence has graciously tendered? We have already slumbered our twenty years. Shall we still sleep on? Shall *inactivity*, while everything around invites to *industry*, still be the password; and the imputation of ignorance and indolence, by those we have enriched, be repeated again and again without awakening us to our interest? Or, shall we rise with strength unimpaired by age, or unexhausted by effort, and entering the arena soon become a mighty competitor in the race for development and wealth?"

There are, we are aware, those who will say, that the loom and the anvil are taking their places, in the regions where the raw materials are produced in the natural course of things; and that no legislative encouragement is needed to accelerate or secure that result. But is it no encouragement that a duty of thirty per cent. *has* been levied to enable us to bring about this state of things? Call you *that* free trade? Suppose then the present protection, such as it is, were withdrawn, what would be left to the labour employed in manufactures, but to fall back upon the plough, leaving still less "to compensate the planter for his care and anxiety?" Is there in fact no danger that the public mind, deluded perhaps by exaggerated statements of profits, may run too rapidly into the other extreme, and make investments in manufactures on the anticipation of profits, which the experience of New England manufacturers, with all their skill and capital, clearly show can never be realized under the present fraudulent system of ad-valorem duties? Need we tell the reader that *our* object is to see a market created for our own agricultural produce, to ensure which the more numerous, and the more prosperous, and the *nearer* their customers, the better for the planter and the farmer? Is it not so?

Finally, we would ask those who have without reflection, or if with reflection, certainly without justice, charged this journal with having *party* aims, whether we have contended for anything more than is here laid down by the democratic governor of democratic Alabama? Are not the positions he lays down, as essential to the prosperity of agriculture identical with those maintained in this journal?

P. S.—Truth, and justice to Governor Collier, require that we should state, that when the preceding was sent to the printer, it was all that we had then seen of his Inaugural Address. But for this statement, it might be presumed that *we* had selected these passages from the context, leaving the public to infer a coincidence between his politico-economical doctrines, and those which are habitually maintained in this journal.

Since then, however, some friend has kindly sent us anonymously, the governor's inaugural address, and his message to the assembly, both of which we have read with equal attention, and respect for the author. We now append *a few more extracts* from the former, as many as we can find room for, on sending back the proofs to the printer in Philadelphia. It is but too clear, that the governor looks on the avowedly "protective tariff" of 1846, as all-sufficient to bring about the wholesome results he has depicted so vividly, as being so desirable in themselves, and so indispensable to the development and fruition, of the rich resources of Alabama. We will only take with him then, most respectfully, the liberty to ask him, to read the



essays—on the “harmony of interests, agricultural, manufacturing, and commercial,” which have appeared, and are appearing in this journal. At all events it will be admitted that something has been gained towards the establishment of our doctrines when high public functionaries, avowedly friends of “free trade,” admit, as does Governor Collier, that 30 per cent. duties is good!

Thanks to the unknown friend, who has had the kindness to send us these interesting documents. Where the light begins thus to dawn, let us hope it will go on opening into the full blaze of unmistakable truth. With such perfect agreement as to ends, let us hope for equal coincidence ultimately as to the means, as far as the latter may be essential to the former.

“In the employment of capital, it is an inquiry worthy of consideration, whether moral duty does not make it imperative upon us, so to direct it, not only that our individual interest may be advanced, but, if possible, it may be promotive of a more widespread benefit. How else can those who need our assistance be more effectually aided than by placing within their reach the means of self-support? *There are vast numbers of both sexes at the South who would labour if suitable employment were offered them at remunerating prices; but this they cannot now obtain, because there is an excess of labourers.* This condition of things demands that we should endeavour to bring into active service the *unproductive labour of the country.* To this end, it is indispensable that the South—the country best adapted—should *manufacture extensively, the raw material found within its bosom or grown upon its surface.* We should introduce new staples and become our own exporters and importers. In short, we should *husband and concentrate* our resources, so as to *provide for our own people and enrich ourselves,\** before embracing with our sympathies those who, in cultivating commercial intercourse, have no other object to accomplish than self-interest.† *Centralization*, as it has been designated, which prompts us to look abroad and neglect the improvement of our condition, must be repudiated, or we shall fail to realize our appropriate destiny.‡

“It is a very common opinion at the North, that the physical condition of the white man indisposes him to labour at the South, and that if it were otherwise, he would not work in a country in which there are a different and subordinate class of labourers. The opinion is evidently erroneous, and disproved by the observation of all of us. There are many men in this country who have grown rich, the germ of whose wealth has been the unassisted labour of their own hands, in the cultivation of cotton; and *many of our most thrifty planters of limited means employ no other labourers but themselves and their children.*

“History gives no account of any people, more economical, sagacious, energetic and industrious than those of the South, when prompted to effort by proper incitements. They are capable of toil and endurance either in the morass or on the mountain, in the workshops or fields, which cannot be exceeded by the inhabitants of the North. Our State is fruitful of such examples. Let our legislation be directed, so as to evolve an exhibition of the qualities indicated, and they shall become characteristic of the masses.

“The adjustment of the tariff in 1846, upon principles *quite as just as we should desire*, considering the diversity of interests and opinions to be consulted, and the satisfactory provision for the safe-keeping and disbursement of the revenue, have removed all ground for controversy with the Federal government upon these questions. Until they were settled satisfactorily to the ascendant party in this State, they furnished appropriate subjects for remonstrance, but nothing more.”

\* Will not some of our readers suspect us of having taken some leaves from the governor's book? We even begin to hope for the honour of placing him on the list of our patrons if he be not already there.—*Edit. P. L. & A.*

† Yes, but the difference is just this, that while the foreign manufacturer of the cloth and iron we import, eats the products of foreign ploughs; the American manufacturer going, be it admitted, like all others, for his own interest, eats the American farmer's beef, and corn, and pork; and is kept by the avails of his manufacturing industry from turning his labour and capital, to making cotton and sugar.—*Edit. P. L. & A.*

‡ For the most lucid development of this idea, marking the difference between *Concentration* and *Centralization*, see that chapter in Carey's work, “The Past, the Present, and the Future.” A work which, while apparently less known at home, is making its way into the libraries of schools and of scholars abroad, as a standard authority on questions of the deepest import, in political and social life. It is now, we understand, being translated for adoption in the universities of Sweden. Prophets are not always honoured in their own countries.—*Edit. P. L. & A.*



## DOGS AND DOG-BREAKING.

BY RAMROD.

MAN has not a more faithful servant than a dog. Amongst our fellow-men we find, alas! great variableness. The loss of fortune, the loss of power, or the loss of health, each has its result. Friends who once rallied round us, "in sickness or sorrow shrink from the test;" but the dog never changes in his feelings towards us: he is always the same. Faithful to his master, he lays at his feet his courage, strength, and talents, and only waits his commands to fulfil his will; he is always ready to forgive, and will lick the hand that gave him pain—in this, a good example to us all.

The shepherd's dog is no doubt the stock from which every sort has sprung—he is the body and root of the tree—and how extraordinary their sagacity! they really can (as a farmer observed to me the other day) "do almost everything but speak." I was riding a short time back along a road in South Wales, and met a flock of sheep (a lucky omen, by the way; at least so say the old women) driven by a man and dog. I heard the man say something in Welsh to his faithful follower, but did not understand what it was till I saw the dog jump over the hedge, and make a circuit which brought him to the entrance of a lane; I then saw that he had been desired to go there to prevent the sheep going the wrong road. On the hills the shepherds' dogs know their master's sheep amongst some thousands, and will gather them together. The Scotch are preferred to the Welsh dogs, as being more sagacious and easier taught.\*

\* The Scotch sheep-dog or colley, here referred to, prefigures this article. For the Spanish sheep dog the reader is referred to page 53 of "The Plough, the Loom, and the Anvil," Vol. I., and for the portraits and characteristic qualities and uses of both, as also for those of the *Drover's* or English sheep dog, employed in driving cattle, he can turn to Randall's admirable work on Sheep Husbandry, of which, Mr. COCKRILL, of Tennessee, one of the largest and most successful breeders of fine wool sheep in this or any other

As regards breeding, the best time for pups to come is about May; they will then have all the summer before them; and, in selecting whelps, choose of course the strongest. But I will here mention that it does not always follow that the largest pups turn out the best dogs, but still it must be observed as a general rule. I know instances where whelps which have been discarded have given the go-by to those selected as being the best. As soon as they are taken from the dam, let them be well fed upon potatoes, buttermilk, and oatmeal, and but little flesh, as that leads to the distemper: above all, take care that your young dogs have plenty of exercise, and plenty of water. Occasionally, give them a tablespoonful of syrup of buckthorn—a better medicine you cannot give them. The first complaint to attack a dog is the distemper, which each has one time or another; it mostly comes on before the expiration of the first year. When it makes its appearance, syrup of buckthorn and sulphur may be given with good effect; and, at a more advanced stage, the following:—

Opium, 3 grains,  
Emetic tartar, 5 grains.

To be given every third night. The dog must be kept very warm, and fed with warm broth, and his nose washed out with alum water.

A dog never has the distemper above once. Many inoculate for it, and it is done in the following manner:—

Take a little mucus from the nose of a dog having the distemper, and put it up the nostril of the whelp: this must be repeated till it takes properly, and before inoculation the animal should have a few doses of syrup of buckthorn.

The earlier you take young dogs into the field the better, and be sure to ascertain, in the first instance, what sort of temper they possess; some require severe treatment, others the mildest. Without proper attention on this head the best dog may be rendered worthless.

Well-bred dogs will begin to hunt at a much earlier age than cross-bred ones, and will likewise require less breaking. And here I will recommend the young sportsman not to be too hasty in forming an opinion as to the merit of the animal he is breaking, as some dogs are a long time before they exhibit the disposition required. I had a dog—and he was the best I ever had—which I gave away after a few trials, thinking it perfectly useless to attempt to make anything of him. Now, this dog turned out a first-rate setter, and I purchased him back from the man I had given him to—a keeper. This has been a lesson to me ever since, not to pronounce a dog good-for-nothing till I had given him a good trial.

At five or six months old, you should take your whelps out, at first only for a walk; by degrees let them ramble about, always teaching them to come back when you call—this leads to obedience; at the same time you can teach them to *down*. If a dog will not do this, you must push him gently down; after this, he will soon come to understand what you mean him to do; if not, a little of the whip must be given, but recollect, whenever you correct a dog always to make friends with him before you let him go, otherwise you will not in a hurry catch him again, and he will always be shy of you. Some flog their dogs without holding them, and frequently

country, says, he has thoroughly examined it, and has no hesitation in pronouncing it decidedly the best work, that has been offered to the American public, either at home or from abroad.

The readers of this journal already know that they can have a copy of it very handsomely bound for \$1, or bound in paper for 75 cents. It will be sent as a slight acknowledgment to any friend remitting \$10 for five subscribers.



give them a parting lick by way of disposing of the wrath they may have left—a worse plan cannot be adopted, as, after this, you can rarely get a dog to approach you.

When a whelp is first taken into the field, it should be with an old dog, and one which cannot easily be spoiled. At first he may be allowed to chase anything (excepting, of course, sheep; otherwise he may take to kill his own mutton—an amusement rather too expensive to be permitted), for if stopped of this too soon he will become shy. In a short time he will understand the thing, especially if worked with an old dog, and will go cautiously when he scents game; but, after many trials, should he evince no disposition to do this, he must be taken to the spot from whence the game sprung, and compelled to crouch to the word *to-ho!* at the same time push his nose down to the ground; after this, the moment the old dog draws, you must caution the young one by holding up your hand, and calling out to him (in rather a sharp tone if he is inclined to disobey you), “*To-ho!*” When he points walk quietly up to him—do not run, or he will certainly move—and give a few words of encouragement, such as “good dog,” “*to-ho!*” &c. Should he run in, take him back to the place he moved from, and there make him point; and the same course may be pursued if he chases hares. When the old dog stands, the young one must be taught to back him; he must be stopped the moment the point is made; if you cannot get him to back, a little whip must be used. Holding up the hand is a signal to back, and therefore you must use him to that. Begin early to teach the young dog to quarter his ground from right to left, or, *vice versa*, and not break fence. Always give him the wind when you beat a field, and if he does not cross properly he must be whistled to, and signalized by waving the hand which way he is expected to go. Your dog should cross about twenty-five or thirty yards before you, and if he beats too wide should be recalled by a slight whistle, which he must be taught to obey; if he pays no attention to it you must show him the fruits of disobedience by giving him a little chastisement. By encouraging dogs when they behave well, and punishing them when they do badly, they will soon become tractable; but, as I before observed, according to the dog’s temper so you must punish or encourage. Great attention must be paid to this, otherwise a young dog will be soon spoiled, and become fit for nothing but the rope. “He is so shy I can make nothing of him,” is an observation I frequently hear made; the truth is, he can make nothing of you, and really does not know what to do. I have had many dogs given to me as being perfectly useless, which have, after a little time, turned out well. I remember once breeding some whelps; I kept two for myself, and gave one away to a neighbour. The one I had turned out very well, whilst the one he had was good for nothing. And how was this? Why, simply that the temper of the animals was shy. This I took care to find out, and acted accordingly; he did not; the consequence I have shown. Some young dogs are alarmed at the report of the gun, in which case much patience and gentleness are required; for, if roughly dealt with, they can never be cured of the fault; but with encouragement, and occasionally allowing mouthing of the bird, the fault in time may be cured. Every young dog will chase hares at first. If he persists in doing so after a little time, you must be severe with him, bringing him back to the spot from whence he started, and there making him point, using at the same time the words *ware chase*.

For dogs difficult to break, the line will be of service; for myself, I have broke many dogs and have never used it; but still, in such cases as the one mentioned, it may be attended with service. This line is about fourteen yards in length, and is fastened round the animal’s neck; the use of it is this; should he attempt to run in, you check him smartly with it, using at the time the

word *to-ho!* if he be not obedient and come back when called, the cord may be made use of to remind him of his duty.

Many persons, who otherwise take a pride in breaking their dogs, frequently omit to teach them a most important accomplishment, or at least neglect to keep them to it after they have been taught. I allude to *down charging*. By want of attention on this point many shots are lost, especially in turnips and potatoes, where birds being dispersed, rise one or two at a time. The instant you fire, each dog should *down*, and not move again till you say "*Hold up*." A dog I once had, always remained quiet till he heard the click of the lock preparatory to putting on the cap; this he took as a signal that all was right. Nine keepers out of ten neglect to teach their dogs to *down charge*. I cannot make out why such should be the case, but certainly so it is. I observed a short time since, as I rode along the road, two men—keepers I imagined them to be by their appearance—who were shooting. Each time they fired their dogs were on the move whilst they were loading. As it happened no birds were sprung, for the covey had all risen nearly together, but had there been any remaining the men would have lost the opportunity of getting shots.

When you first take a whelp into the field, from that time begin to teach him always to follow, and never to go before you over a hedge. If brought up in this way he will never break fence.

I do not like to see a dog *rake*—that is, hunt with his nose to the ground—as he is more apt in that case to spring the game. If he is inclined to do so, you must call to him, in an angry tone, "*Hold up!*" A dog which goes with his head high will find the most game, and in the best style.

The first season is a critical time with the young dog; if he is then neglected, or allowed to indulge in any bad habits, he is forever spoilt. At that time no error should be overlooked, and no deserved encouragement omitted. Then will be the time to determine his worth, whether or not he is good for anything.

I have always preferred to break my own dogs, as I think it of importance that the master and dog should understand each other. I am also an advocate for every coachman driving his own horses—that is to say, each man should drive his own ground double, or go through and return next day. Men have such different hands, that horses cannot work pleasantly when driven by different people; in fact, they never know what to be about, as one man makes play over one part of the ground, the other over another.

Keepers and dog-breakers are frequently a set of muffs, and do not, or cannot, make their teaching plain; their pupils are licked, for what they do not know; in fact, the dog would, if he could speak, say with Hercules, "I still know naught; thy teaching is not clear." However, I do not mean to include all in what I have been saying; there are, doubtless, many excellent men who understand their trade: to such I would recommend the gentlemen to go, for, unless he has time, understands and takes an interest in the thing, he might doubtless spoil the young dog; but, for any one who has time and inclination, it is certainly the best plan to *bring your dogs up at home*. Every man has a different way of teaching: consequently, when you get your whelps home, most likely you cannot understand them, nor they you; whereas, had you broken them from the beginning, all would have gone on merrily.

Be careful never to name your pointers or setters Carlo, Ponto, or any name ending with o, as they will frequently confound it with *To-ho!* Let the name you choose be one syllable, such as Nell, Poll, or Bell, but never take out a Bell and a Nell together, but each dog should have a totally distinct name.

Your spaniels should be always much of a size and color. Nothing can

be prettier than a team of such dogs when they match, and are properly broke.\* Each, when you fire, should drop to the gun: this has a very pleasing effect: six or eight dogs are beating together, and some of them tonguing, you fire, and all is silent till you have loaded, and given the signal to move on, by saying "Hold up!" Woodcock shooting with spaniels is beautiful sport; it is most pleasing to see how they search every spot, and their activity is most surprising; not a place escapes them—how quick they move round every bush and tree! Ah! mark that cock just risen from the foot of yon stub; he thought himself secure there, but Dash found him out and soon put him to flight. I warrant he is secure enough now in the game bag, and may be soon have company.

Some persons prefer mute spaniels. I cannot say I do, for I like a little music, but not too much, which is worse than having none. However, mute dogs have of late years come very much into fashion.

As regards a dog's power of scenting, it is unfair to judge by first appearances, for it varies so much according to the day, soil, and weather. In a north wind there is never any scent, whereas, in an east wind, with snow upon the ground, I have seen it lie well; but a south wind is to be preferred to any other:

"A southerly wind and a cloudy sky  
Proclaim it a hunting morning,"

says the old song, and, therefore, if it is good for hunting it is good for all sport. In foggy weather there is very little scent, and the same may be said of a white frost, and when it is going off.

It is strange, but nevertheless true, that, when dogs roll much, and when they come out of cover with their tails bloody at the point, there is never any scent.

All dogs with broad heads have a better sense of smell than those with narrow heads. It is so with the fox and wolf, and their olfactory organs are known to be great. For this cause I like to see my puppies with good broad heads, and always choose such as are so formed. I also look to their ears and feet; the former should be large and pendent, and the latter round and well spread.

A good retriever is a most difficult dog to obtain, and will always, if perfectly broke, fetch a good price in the market. Almost every sort of dog may be taught to retrieve, provided pains are taken; but where the commencement of the education is suffered to be carrying sticks, and other hard substances, they never turn out well, their mouths become hard, and, in consequence, all the game they carry is spoiled. A stuffed glove is a good thing for them to carry at first, as it is soft; should the young dog hold it rather tight, do not force it from him, but gently coax him to let you have it; if you pull he will pull too, it will be "pull devil, pull baker," and if it is torn, from that time he will learn to tear game.

Retrievers should never of their own accord rush to recover game, but ought to remain perfectly still till desired to move.

Many teach their setters to retrieve—a plan I do not approve of. An old dog may be made use of in this way, but to accustom a young one to it, is

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\* The writer here refers to the cocker or King Charles breed of spaniels, a small beautiful race, with long soft silky hair. They are usually liver and white, or jet black and white. They are or were some years since, in great perfection at Carrolton Hall, in possession of Mrs. McTavish, from the kennel of the Marquis of Wellesley, who married her accomplished sister. All her friends remember Mrs. Commodore Ballard's beautiful and faithful old spaniel *Hope*. Gladly if we could, would we register with honour, the name of every good and gentleman like dog that ever lived.



certainly a way to spoil the animal. I know dogs that have been perfectly steady till their services were required to find a wounded bird, and after then have taken to rush in. To endeavour to recover a bird which runs with either a pointer or setter is the most certain way to spoil them; and yet I frequently see persons, who profess to know a great deal about sporting, pursuing a bird they have wounded up and down a potato field, encouraging their dogs to hunt, as though they were terriers; and, when the same dogs make a bad point, and are unsteady, finding fault with them, forgetting with whom the fault really lay. Now, I would ask, are such persons to be trusted to break a pointer or setter? Certainly not; and I would advise my generous friends not to lend such as they anything but an old dog, which cannot easily be spoiled.

As regards feeding your sporting dogs, let it be upon oatmeal and a little boiled flesh, such as leavings from the house. Never give them raw flesh; that fills them with every humour, and leads to distemper. Every week I give my dogs some sulphur in milk, and I always keep a lump of rock sulphur in the water they drink; this, I am convinced, tends to keep them in health. If you are constantly with your dogs—that is to say, in the habit of seeing them—you will soon discover if they are getting out of health, in which case you must prevent illness by a little medicine, judiciously administered; by strict attention you may prevent anything serious attacking your kennel.

One of the most troublesome complaints to get into your kennel is the mange; for where it takes hold, there it will remain for some time, spreading from one to the other; it is catching, and therefore any dog attacked with it must be removed, without loss of time, from the rest; and not only that be done, but the straw the diseased animal has been lying on must be taken away and destroyed, and the place it has been on well cleaned. The mange will proceed from dirt and bad food. The best cure for it is—

Oil of tar,  
Sulphur vivum,  
Train oil (of each an equal quantity).

With this the dog should be well rubbed several times in the day, and at the same time sulphur should be administered. When the disease is very bad, mercurial ointment may be rubbed on the part affected; but, as this will kill a dog if applied injudiciously, it must be done carefully, and the dog muzzled.

Of hydrophobia I shall say nothing; there is no cure for it, and I recommend the dog should be destroyed immediately, if you have any suspicion it is going mad.

I shall conclude this article with a few words on kennels and their management, and shall first notice cleanliness, without which no dogs can thrive. To such as are too lazy to see after their own affairs I would recommend the adoption of the box kennel, as that will require less trouble to keep it clean than the house. With a long chain the animal will be able to come out, and consequently will not dirty his abode. I always have my boxes made with drawers, which come out behind; these I scour, and put in the sun afterwards to dry, any day when the dog is out. The chain with which the dog is fastened I have made with a swivel upon it, to prevent any fear of the dog hanging himself, should he struggle to get free. Any blacksmith will make the chain I have described.

To prevent the effect of damp upon the dog, I have adopted the plan of having wheels under my kennels. Thus, by raising them off the ground, I keep them dry, and am able to move the dogs wherever I please; thus in

cold weather I put it in the sun, and in hot weather in the shade—arrangements, according to the season, most grateful to the dog. Extremes of cold or heat that animal feels most acutely, which may be seen by noticing that it wraps itself in winter in anything warm, such as hay, straw, &c., of which it makes quite a nest; and in summer chooses the coolest place to lie in.

Light and air are absolutely necessary in kennels; and I may add in stables also, more especially perhaps in the latter. I have, for my dogs to lie upon, a bed raised from the ground about two feet; it is made of cross-bars; and to prevent the dogs getting beneath it, I have it boarded to the ground in front, the sides of course run up to the walls of the kennel. Though it is boarded to the ground, I manage to arrange it so that I can remove those boards in case it is necessary to do so, to clear away any dirt or straw that may fall underneath. From the bed should be a fall all the way to the opposite side of the kennel, through which a stream of water should be constantly running. The floor should be of brick, which looks much better than stone, and is easier kept clean. Every morning the kennel should be swept down, and every bit of dirt removed; fresh straw must be laid on the beds every other day; it must be wheat straw, and it should be sprinkled with flour of sulphur, to keep off fleas. Hay must never be put under dogs, neither do I recommend shavings, nor saw-dust; wheat straw is best, both for horses and dogs. Before putting it under them, shake it up well; and if you can get such as has been thrashed with the machine, it is to be preferred to that thrashed by the hand, as the straw is softer for the animals to lie upon. The door of the kennel should have wire in it, and a shutter to put up in cold weather. In summer you cannot give your dogs too much air, and in winter you cannot keep them too warm. Therefore, by having the wire in the door, and a shutter over it, you can regulate the temperature of the kennel as you like. If you have sufficient room, I would advise there should be a second yard for the dogs to go in whilst the kennel is being cleaned; it will likewise be a change for them, and is always useful to separate them during feeding or any other time.

One most important point for those to attend to who keep dogs in kennels is, that they have plenty and regular exercise. Without they have, all the good feeding you give them will never make them look well. They should be taken out every morning, if you do not intend to use them, for an hour at least.

Dogs, especially young ones, when confined in the kennel, are very often subject to worms; if such is the case, you never can get them into condition, and therefore you must endeavour to remove them. The best receipt for doing so is as follows:—

Linseed-oil, half a pint,  
Oil of turpentine, two drachms.

For a young dog a little less than this will be sufficient. If it does not succeed the first time it is administered, repeat the dose. I have destroyed worms in a dog by simply giving a tablespoonful of linseed oil the first thing in the morning; but you cannot depend upon this as an effectual remedy. Many recommend calomel for this and many other complaints the dog is subject to; but I am no advocate for its use, and have always avoided introducing it into my kennel, and I think I can safely assert that my dogs have been always in as good health, if not in better, than those of my neighbours.

I shall now take leave of the subject; and thanking those who have read what I have scribbled, for their kind attention, and hoping the *bag* has been a good one since the season commenced, beg to remain the public's obedient servant,

R.

London Sporting Magazine.

## IRON MASTERS' MEETING IN BALTIMORE.

THE large list of patrons to "*The Plough, the Loom and the Anvil*," in Baltimore—men of superior intelligence and standing—and quite a number of whom subscribe for five copies each, for the sake of the cause we advocate, all conspire to make it in a manner obligatory upon us to preserve the following *Report*.

But independently of these considerations, who can fail to see, that the facts it discloses, and the policy it recommends, have a direct connection with the *agriculture*, not only of Maryland, but of the whole country? Why it is the very connection of these industries with agriculture, and the effect upon agriculture of the policy (wise or improvident), which bears upon them, that the farmer at his plough needs to have pointed out to him!

It was in truth, let us reiterate, for *that* purpose chiefly that we consented, at an advanced period of life, in casting about for some means of honest support, to run the risk of making a scanty living by devoting all our faculties to another agricultural journal. It was here, in this way, and in this only, that we could see that the Farmer and the Planter could now, and in the present state of things, be materially benefited. Why teach people how to make more, when markets are already filled to a surfeit? No! let us rather show, if we can, how the market may be steadily and *profitably relieved* of its surplus grain, and meat, and wool, and cotton. No agriculture ever did, or ever can flourish, where people hold conventions, as in some parts of the United States, to devise means for *reducing production*! It is only when the general study is, how to *increase production*, in order to reap the rich rewards of *increasing and steady demand*, that the discerning patriot may felicitate himself that his country is doing well—and that demand will never increase, (unless in times of famine,) while we import manufactures consisting chiefly of the beef and corn of other countries—supplied at a cheaper rate, because those who produce them are reduced to the alternative of working for and *supporting their families out and out*, on six dollars a month—or going into the poor's work-houses.

What does the farmer of the eastern and of the western shores of Maryland see in this lucid report; the result of proceedings had by gentlemen of the highest character, *irrespective of party*? "From the most reliable information," it says, "your committee have ascertained the cost of charcoal pig-iron in the vicinity of Baltimore to be from \$22 to \$23.50 per ton—and in the making of that iron, the material—ore, wood, &c., as it stands on the ground, is worth only from \$2 to \$3 per ton, the difference between the material and the cost [\$20 the ton] being *the wages paid in its manufacture*." And what becomes of these "wages?" *How are they applied?* Let the Maryland farmer unravel that question—a very simple operation; more easy than to straighten a tangled hank of his wife's yarn; and then he will see whether it is not as important for him, to study and to *control* the legislation by which these things are regulated, as it is to be told how he can lay a pound more of fat on the inside or the outside of a hog or a bullock; or how he can make *one bushel* more of corn on an acre, of which now he makes more than he can sell at a remunerating price? Well, as to these wages of \$20 for every ton of iron? Does not *almost the entire* amount go for daily food, and fuel, and clothing, the products of agriculture, for the labourers and their families, to whom these wages are paid?

This most reliable report—reliable as well for its source as for its facts—states the production of the furnaces and mills of Maryland under a protective policy, such as would give a fair chance to American labour, would be 75,000



tons a year. Allow then \$20 a ton in wages for its production, and we have 1,500,000 dollars for *this manufacture alone*, within the limits of Maryland, to be expended exclusively within her borders, for the products of American ploughs, and axes, and spades, and pastures; in wood, and corn, and flour, and beef, and pork, and mutton, and butter, and milk, and potatoes, and turnips, and wool. But perhaps there are those who think it better, that the American farmer should buy his iron, if, even for the time being only, he can get it a little cheaper, from countries where it is made by labourers who are reduced to the necessity of so living, as scarcely to keep soul and body together! From countries where, in fact, the soul of thousands every year abandons its "tenement of clay" sheerly for the want of any means to keep life in it: where in a word, thousands, as in England and Ireland, (to which the Baltimore and Ohio Railroad sends by the single dash of a *swan's quill*, for 23,000 tons of rail-road iron), *perish every year by starvation!* and this is done in the name of "*free trade.*" *Free!* What magic in a word! What amount of mischief has been done in this world, by substituting the shadow for the substance! sound for sense! *Free trade!* Yes! a freedom that separates and drives far away the loom and the anvil from their natural position *near to the plough.* A freedom that compels us, against the laws of nature and of reason, to send away the raw products of the great machine, the land, thousands of miles away in search of small machines, to be by them converted into shapes ready for consumption. Why don't we send our wheat to England to be ground, and our timber to England to be wrought into ships and furniture, and our leather to be made into saddles and bridles? It would only be carrying out the system!

#### IRON MASTERS' MEETING.

At an adjourned meeting of the Iron Masters and others interested in the manufacture of iron in Maryland, held at the Exchange Hotel on the 2d instant, S. S. LEE, Esq., made the following report on behalf of the committee who had been appointed at a previous meeting to report upon the present depressed condition of the iron interest of the State:

The committee appointed at the meeting of the iron masters, held in Baltimore on the 3d November, to report upon the present depressed condition of the iron manufacture of the State, respectfully report:

That, in the discharge of the duty assigned them, they have obtained information from every furnace and rolling-mill in the State. The number of furnaces is thirty-one; the number of rolling-mills for bars and railroad iron is five. Of the furnaces, eleven have stopped within the last two years, and six more have discontinued their mining operations, and are stopping as fast as the material on hand is used up. Those now at work must also stop, unless there is a change in the condition of the trade.

The rolling-mills for the manufacture of bars and railroad iron show even a more disastrous condition of that branch of the iron interest of the State. Of the five mills, only *one* is at work, and that one but partially so; the others having been compelled to discontinue their operations, the price for English bars and rails having ruled below the cost of producing them for the last two years.

The amount of iron produced when the works are in operation is about 55,000 tons of pig, and about 20,000 tons of bars and rail per annum. In the manufacture of this amount of iron, support is given to nearly 50,000 persons in our own State; while in the coasting trade incident to it, a large number of men are employed from other States; for a great portion of the pig iron made in Maryland is carried to the manufacturing districts of New England by their coasting vessels, and most of the bars and rails to other parts of the country.

Your committee finds the chief cause for the extraordinary depression of the iron interest to exist in the fluctuations of the English and Scotch markets, growing out of interruptions in the usual channels of their trade; for whenever such interruptions occur, as in '41 and '42, and in the past two years, '48 and '49, their surplus production is thrown upon the American markets, glutting it, and thereby causing the stoppage of our works, and the consequent ruin of a large number of our manufacturers.

Your committee can see no remedy for this, so long as the present duty on iron remains

unchanged, and the very great difference in wages between the countries exists. The English and Scotch iron masters have perfect control over their labour, until it is reduced almost to the *point of subsistence*, through their thorough organization, the low interest on capital, and the *superabundance of labourers*—while, in the United States, the demand for labour is such that the iron masters cannot reduce wages below the price paid to labourers in other branches of business. At the regular quarterly meetings of iron masters in England, the *price of iron* for the ensuing quarter is declared, and the *price paid for labour* depends upon the *price of iron* so declared.

The power which they possess over their labour is exhibited in their ability to reduce the price as the necessity of the case may require, and still continue to manufacture it. For example: during the years 1845, 1846 and 1847, the price of bar iron at Liverpool (see statement annexed) averaged respectively, £9 4s., £9 13s., and £9 17s.; and before the close of 1848 the price was reduced to £4 15s., and has varied but a few shillings from that time to the present, showing a reduction in less than twelve months of nearly 50 per cent. In Scotch pig iron the reduction has also been as great. In 1845 the average price was £4 0s. 3d., and in 1848 the average price was only £2 2s., and at that extreme low price it has continued to the present.

From the most reliable information your committee have ascertained the cost of charcoal pig iron in the vicinity of Baltimore to be from \$22 to \$23.50 per ton, and in the making of that iron the material—ore, wood, &c., as it stands in and on the ground, is worth only from \$2 to \$3 per ton; the difference between the material and the cost being the wages paid in its manufacture.

There are situations in the State where coal and ore are so contiguous that coke iron can be produced at a less cost; but when the transportation to market is added, the cost there does not differ materially.

The experience of the last four years has shown that the *ad valorem* duty, *without a minimum*, as laid by the Tariff act of 1846, has operated very injuriously to the interest of the American manufacture. For when the price of iron is high abroad, the duty is high at home, giving to our manufacturers an incidental protection, which continues so long as the foreign market remains high; but as soon as the foreign market fluctuates the duty falls with it, so that at the time when the highest duty is needed by us to enable us to sustain a competition with the foreign manufacture, the protection which we had received from the duty is taken from us—thus acting as a *sliding scale against* the American manufacture. When the tariff act of 1846 was passed, the 30 per cent. duty on the price of iron at Liverpool (\$50) was \$15 per ton; the cost and duty added made the price \$65. But for the last two years the price has fallen from \$50 at Liverpool to \$27 per ton, and the duty from \$15 to \$8 per ton—making the cost of iron and duty \$35 per ton, a fluctuation of \$30 per ton.

To sustain our manufacture we require the *reverse* of the operation of the present *ad valorem* duty. When the price abroad is highest we need the least duty; and when it is lowest we need the highest.

It is of the greatest importance to the prosperity of the American manufacturer that the fluctuations of the foreign market should have as little effect as possible upon our own. They may be lessened by a fixed specified duty on the part of our Government, or by a sliding scale of duties in *favour* of our manufactures, *not against them*, as our present *ad valorem* duty produces.

We do not ask for excessive or prohibitory duties, but we respectfully ask, in collecting the duties necessary for the operations of the Government, that they be so arranged as to *foster and promote* the American manufacture.

Your committee would call your attention to the very large quantity of Scotch pig iron and English bars, which the foreign manufacturers have sent into the markets of this country in the last year. Availing themselves of the low duties, they have sent large stocks of iron to our markets, which from the very low rates of interest on capital at home, they can afford to hold until the regular wants for consumption absorb them.

In like manner has the *ad valorem* duty operated upon other important interests of our State, in the manufacture of many articles from iron. The shipping of Baltimore has been supplied with cables and anchors of the manufacture of Maryland until within the last two years, but the great fall of prices abroad, and consequently the duties at home, has caused those establishments to be closed, and the business to be entirely stopped.

Your committee would therefore recommend that the condition of our works, and the causes which have produced it, be made known to our Representatives in Congress by a committee, who shall urge upon them the necessity of such modification in the arrangement of the tariff necessary to the support of Government as will afford us all the benefit of incidental protection, in the collection of the revenues—either a specific duty, which

is the most simple, or a sliding scale which shall increase the duty with the fall in price in the foreign markets. Respectfully,

JOHN BARKER,	} Committee.
STEPHEN S. LEE,	
E. T. ELLIOTT,	
PETER MOWEL,	
H. ABBOTT,	

The report having been read, it was unanimously adopted.

E. Pratt, Esq., moved that a committee of ten be appointed by the Chair, in accordance with a recommendation of the report; and that said committee have power to fill any vacancies which may occur.

The resolution was adopted, and the following gentlemen appointed as that committee, viz: Messrs. E. T. Elliott, E. Pratt, Stephen S. Lee, Peter Mowel, of Baltimore; Messrs. C. E. Detmold, John S. Graham, of Alleghany; Messrs. Joshua Bryant, Isaac Rodgers, of Harford; Messrs. Richard Green, Robert Howard, Baltimore county.

And, upon motion, the proceedings were ordered to be published.

### ANOTHER AGRICULTURAL CONVENTION IN VIRGINIA.

WHEN the doctors mistake the symptoms of the disorder, how can they rely on their remedy?

Time out of mind, have they been holding "Conventions," and forming societies, to improve agriculture in Virginia, as if her sons were deficient in knowledge or zeal! Whereas, we venture to say, that in the whole Union, the agricultural community is nowhere better informed, as to the structure of implements, the qualities of domestic animals, the value of manure, and as to the most approved processes of agriculture, than are the body of the farmers of Virginia. And yet, we find the Hon. A. STEVENSON, one of her most enlightened, patriotic, and justly distinguished citizens, in a highly instructive address to the agricultural society of Albemarle, says, "it can hardly be necessary to attempt to impress upon you the *depressed and wretched condition of the farming interests throughout the State at large*, with the exception of some few portions of it which constitute honourable and praiseworthy exceptions." Now, the question arises, one which no true Virginian will attempt to dodge or blink; *whence arises this "wretched and miserable condition of the farming interest throughout the State?"* For one, well as we know his zeal in the cause, and the fullness of his anxiety for all that concerns the welfare of his State, we must presume, with unfeigned respect, to differ with Mr. S. in the opinion he expresses that,

"In the first place, then, it has *mainly arisen*, from too great an indifference, I might almost say, total disregard, of modern scientific knowledge, connected with practical agriculture, foreign and domestic. From deep-rooted attachments to old habits of cultivation, descending from generation to generation, and from father to son, and which attach so many of our Virginia farmers with 'hooks of steel' to their ancient modes of cultivation."

Meetings of the same character have been held in various parts of the country, where gentlemen of superior intelligence and undoubted patriotism and public spirit of both parties, (how mortifying to speak of *party* in connection with such a great industrial question!) have maintained the same views, asserted the same evil and called for the same remedies. The naked truth is, that for a nation to make its own *blankets and cloths and iron*, is a question, not of a party, but of national independence, or (with us) of subjection "to the policy of British merchants."

Now, well as we know his zeal in the cause, the wide scope of his personal observation of the most improved husbandry at home and abroad, and the fullness of his anxiety for all that concerns the welfare of his State—in which



last sentiment we claim cordial participation—we must presume, with unfeigned respect, to differ with him as to the principal cause of the dilapidated condition of Virginia agriculture which he so vividly describes. We rather apprehend that the principal cause of its depressed and wretched condition, in that, as well as in too many other States—New York, Pennsylvania, and Maryland, included—is to be found in another passage of this interesting and instructive address, where the orator states, in speaking of America:—

“She has now more than fifteen, out of seventeen or eighteen millions of her population, engaged in agricultural pursuits—with no probability of its diminishing.”

Here, in our humble judgment, lies the great secret of the depressed and wretched condition of the agricultural interest of every State, and of every country, where the agricultural producers are in such enormous disproportion to their customers.

We had occasion, lately, to run a comparison between the growth and progress in population and wealth, of Massachusetts and North Carolina, for the last half century: by which it was seen, that the latter, having the start of Massachusetts, continued for thirty years to maintain her position ahead, nay to widen the gap between them; both going along at rather a slow pace, as long as the population of both States remained, in very large proportion, as it still does in North Carolina, *at the plough*, in the full proportion here stated by Mr. Stevenson. But, twenty years since, after three heats of ten years each, and when, against the vote of Massachusetts, the policy of the government was changed, tempting capital and labour from the plough to the loom and the anvil, she, with that pliability of genius and adaptability to circumstances which distinguishes the New England man; promptly occupied the avenues opened to her industry, even against her consent—and lo! what a change! In twenty years she has filled up the gap, which till then had been widening between her and the old North State, and now, at the end of this heat, in the year of our Lord 1850, instead of 127,000 of population *behind*, she will come out ahead of her large old sister—and that in spite of fluctuations in the tariff policy of the country, which, like occasional calms at sea, have left the sails of her industry to hang flapping against the mast. Even now some of her great branches of industry are wilting like corn in a season of sudden and severe drought—still the increase of her population, her railroads, her schools, her commerce, and all the signs of wealth and prosperity and power, since she commenced to draw the loom and the anvil close around the plough and the harrow, have been without example in the industrial progress of any people.

Now what resource or facility for manufactures does Massachusetts possess, that Virginia does not enjoy, two for one? Massachusetts has no coal, no iron, not much timber, no corn, no beef, no leather, with soil and climate greatly inferior; while Virginia emphatically abounds in all the elements of all the industries that breed *customers to farmers*. The highest priced wool in the northern factories, has been drawn from her mountains, in near proximity to coal, and iron, and wood, and water power, that ought to be spinning it into yarn and weaving it into cloth. The shortness of her winters, and the equanimity of her climate, secure to her flock an even pile and a heavier fleece than can be had where the growth is arrested by severe cold. And, from the fact, that there is for labour but the one channel, her mountains and valleys are filled with idle people, who would be working up her wool, putting money in their purses, and becoming good customers on the spot, instead of being a burden to her agriculture.

Wheat, at this time, is selling in Baltimore and Richmond at \$1 per bushel. When it brought \$1 10, General Jackson said to Doctor Coleman:

"I will ask, what is the real situation of the agriculturist? Where has the American farmer a market for his surplus produce? Except for cotton, he has neither a foreign nor home market. Does not this clearly prove, when there is no market either at home or abroad, that there is too much labour employed in agriculture, and that the *channels for labour should be multiplied*? Common sense points out at once the remedy—draw from agriculture this superabundant labour, employ it in mechanism and manufactures, thereby creating a home market for your breadstuffs, and distributing labour to the most profitable account, and benefits to the country will result. Take from agriculture in the United States six hundred thousand men, women, and children, and you will at once give a home market for more breadstuffs than all Europe now furnishes us. In short, sir, we have been too long subject to the policy of British merchants. It is true that we should become a little more Americanized, and, instead of feeding the paupers and labourers of England [as we do by sending there for her manufactures], feed our own; or else, in a short time, by continuing our present [free trade] policy, we shall all be rendered paupers ourselves."

Colonel John Taylor, of Caroline, the father of so much of the melioration which has taken place in the practical agriculture of the South, pronounced the opinion, that wheat would not pay, when its product fell below ten bushels. Now, we hope we "don't intrude;" but does Virginia *average* eight of wheat, or twenty of corn, or as many of oats? What, in short, is the per centage of profit on all the capital embarked in agriculture, according to a fair valuation, and how stands the account at the end of the year, of her aggregate capital and labour? Will some friend—say of the Albemarle Agricultural Society—let us know what is the general, or his own, impression? And we venture to ask, *currente calamo*, but most respectfully, the Delegates from each county now at Richmond, to confer and inform us at Washington, where we are residing, what is their necessarily rough, but impartial estimate, each speaking for their own county, of the supposed average acreable product in the various grain crops, and in tobacco, where that crop is cultivated? We shall endeavour to get at the same object, by the same means, in some other States. The result would be a valuable item in agricultural statistics, much more reliable than such estimates sometimes are. But to return to our subject.

Have not State Agricultural Societies been repeatedly formed and incorporated in Virginia and other States, under promising auspices, but ending in abortion, sooner or later, as they ever will, until aided by a wise course of general legislation, that will tempt millions of capital and of *men*, to come within her borders, there to work up, on the spot, the raw materials of industry which the God of Nature has bestowed upon Virginia in such profusion, and which, as He does nothing without design, He *designed they should use*. When men shall thus be drawn, by the assurance of remuneration to labour, to come and consume on the spot, the products of improved agriculture, *then* will come the science to improve. Only give assurance of \$1 50 per bushel for wheat, and 75 cents for corn, for the next ten years, and it will do more to retrieve the "depressed and wretched condition of the agricultural interest throughout the State," than all the science and all the agricultural societies that were ever brought to bear on the subject. Instead, then, of drawing off her population from agriculture, as General Jackson suggested, her farms will be divided and subdivided, because her sons will stay at home, the plough will be run deeper and faster, and her old maiden daughters, however respected and happy now, will become more useful to the commonwealth, as wives and mothers, where they have ever shone—even to a proverb. If, at this moment, she had a consuming population within her limits, in the proportion to

her people at the plough, that they have in Massachusetts, raising the price of her three staples,—wheat, corn, and oats—to what they bring at this moment in Boston, it would make to her, according to the statement of her products in 1840, a difference of five millions and a half of dollars in her income—enough, every year, at \$20,000 a mile, to build 275 miles of railroad—and, enough to put up in Richmond in two or three years as many cotton factories as there are in Lowell.

These frequent well meant, but fruitless attempts, to redeem the agriculture of States so expanded and so blessed with glorious natural advantages, merely by the formation of Agricultural Societies, and by the offer of small premiums for individual success in particular cases, place them in our view, in the light of a strong resolute man, contending blind-fold against invisible enemies, thrusting at his vitals. No! The disease is too “desperate grown” to admit of removal by any such superficial appliances—Virginia may rely on it, she will never improve her agriculture, thicken her population and augment her power, as with her resources she ought to do, while she leaves such water-power as that at Richmond, and at the great falls of Potomac, unoccupied, her furnace fires to go down, her coal lying in the pits, where Providence placed it to be delved and used—she must insist on a policy that will force the light and comparatively cheap machines of conversion, to come and do their work on the great machine of production; the men who build Farish’s fine post coaches, and her steamboats, and make her axes, and ploughs, and spades, and hoes, must be tempted to come and build and make them out of her own timber and her own iron. The men who make her shoes, and her saddles and bridles, must be tempted to come and make them out of her own leather, from her own hides, with her own tan bark. She must agree that our tariff policy shall make it the interest of those who, in England, manufacture her iron and her cloths, shall come with their capital and their skill, and manufacture them with her own coal and ore, and with her own wool, for which she has unoccupied pastures fitted to supply millions of pounds of all, and *especially* of the finest qualities: and while they are thus making within her borders, out of her own materials, the iron and the coaches, and steamboats, and shoes, and saddles and bridles, and cloths, she will be supplying them with their clothing and food, of which last, the produce of the labour of the down trodden serfs of Europe, a very large proportion of the manufactures she now imports, *are actually composed*—of pig-iron for instance, as we see by the Report of the Baltimore Iron Masters, in this number of *The Plough, the Loom and the Anvil*, the raw material on the ground—the coal and the ore, make \$2 or \$3—the rest of the cost, say \$20, being composed of the produce of the plough and the harrow, the hoe and the axe. Instead of upholding a policy that would in a few years, if steadily maintained, as the permanent system of this country, lead to all the most glorious results, in the growth of national wealth and power, behold us advocating a system under which, the Baltimore and Ohio Railroad, by a single scrape of the pen, sends “home” to England, for as much railroad iron as, if made in the United States, would demand for its manufacture more than a million of dollars of agricultural produce. True, to her credit be it said, giving hope of redemption, Virginia has lately taken some promising measures in the right direction, by appropriations for surveys and railroads; but railroads, creative and beneficial as they are (and to which the government should rejoice at any opportunity to contribute indirectly, instead of higgling about mail pay), they are yet mainly useful and profitable to agriculture, *our* only concern, chiefly as they afford channels for conveying the products of various industries, that serve to make a market for the natural and artificial products of *the land*! No railroad would ever be needed or pay, as a means of transportation and intercourse, between agriculturists alone.



Take a single glance, at her tide-water counties! Do they stand in need of cheaper transportation? What human contrivance can surpass the canals which nature has provided for all eastern Virginia? Why is it then, if there be not some other source of rottenness in the State of Denmark, why is it, that paralysis seems to have fallen even heaviest on that portion of the commonwealth? No! she wants that *diversified employment*, which concentrates population, drawing the manufacturer to the side of the agriculturist, creating on the spot, a demand for which no rural product is too large or too small—from tons of cabbages and potatoes down to pounds of butter and pints of blackberries—For the wants of protected industry, under our institutions and with our resources, nothing that can contribute to human or animal sustenance would be too heavy or too light to be absorbed by it. Like the elephant it would turn from lifting a bale of cotton or a hogshead of tobacco to pick up an apple or an egg. Of all the States of this Union, Virginia, near and accessible as she is, at all seasons, to immigrants from Europe, ought to be among the first to put down her foot and say; for not *one dollar's* worth, for which we have the materials, will we go to foreign countries! In the essays of Mr. Carey, published, and to be published, in "*The Plough, the Loom, and the Anvil*," the effect of such a policy on every public interest, and every branch of industry, has been most thoroughly exposed to view, and so illustrated, even by diagrams, that he who runs and *can't* read, may yet understand it. It is there not merely stated but *proved* that, with protection, always comes increased power of consumption, with augmented importation, immigration, and revenue. That, in fact, and beyond all dispute, every branch of American industry, commerce among the rest, invariably thrives under a protective, and as invariably declines under a free trade policy. There is no exception. It applies, as he demonstrates, to iron, coal, cotton, wool, shipping, steamboat-building, house-building, national revenue, and credit, in a word to everything. He who doubts *is challenged to read!* We have no party to defend, no theory to uphold—we seek only the truth *for the benefit of the planter and the farmer.*

What, let us ask, are the obvious considerations that should lead the Virginia farmers to rejoice at high wages and prosperity to the labour, employed in *our own country at all the other pursuits?* Why, obviously because that condition of things offers a resistless temptation to the not half-paid, and more than half-starved operatives in the manufactories and workshops of Europe to come, not single or in pairs, as house flies, before invisible, are quickly seen to come from all quarters, to a pot of honey; only assure the foreigner of full wages at manufacturing and mechanical pursuits, and you will see them come, as they ever have come, under a protective policy, by *shoals and in thousands*—and when *they do* arrive, what then? Why then, instead of going off to follow the plough, on cheap lands in the west, as men bred exclusively to agriculture would, in search of subsistence, by the only occupation with which they are familiar, these countless swarms of immigrants would remain on the seaboard to eat the products of the plough, and with increased demands, would come, as through all nature does come, increased supply! even the supply of "modern scientific knowledge of practical agriculture." In vain shall we exhort men to acquire the scientific knowledge to make more, when, what they do make, *won't pay!*

Virginia now wastes in idle labour, and in wagons and horses, travelling over long and bad roads, more in the work of sending away her products to be exchanged abroad, for what she gets in return (all of which she might make at home), more than would build all the lighter machines of conversion within her own borders.

Finally, let those in Virginia, who share in controlling the policy of go-

vernment, as respects its industry, ask themselves a few plain simple questions, as for example:—

Even supposing the labourer of Europe to be a consumer of American agricultural products (which he is to a very limited amount, unless in time of occasional famine), where would he consume most? As a famishing, half-starved, half-paid labourer abroad, or as a thriving, prosperous, well-paid, well-fed freeman here in our own country? and again. What economical temptation has Virginia and her policy ever held out to the immigrant to go and settle within her borders, except the natural advantages of her glorious climate, and the social attractions presented by the generous and hospitable qualities of her people?

What employment does she offer to the capitalist or the manufacturer? Hence, of the millions who *are* coming to our shores, how many *dozen* settle in the old dominion? But let her unite in insisting on a course of legislation that will protect American industry, and turn labour, as General Jackson suggested, and, as is systemically inculcated in "*The Plough, the Loom, and the Anvil*," into other channels, and in ten years, her great railroads would be completed, and every trunk thereof, would shoot off its branches to thriving towns, around her mountain cascades, and in their valleys, as they do in New England. Norfolk and Richmond, then thriving like New York, and Albany, and Boston, and Lowell, would have their steamboats and regular packets, and tobacco ships, coming directly into the Chesapeake with thousands of immigrants from Europe, to enjoy the superior advantages of their soil and climate, and we should no longer hear, as now, the voice of the eloquent patriot lamenting "*the depressed and miserable condition of the agricultural interest throughout the State.*" "An agricultural convention to form societies is *not the probe for such a sore!*"

P. S. The preceding reflections came, from seeing in the *Southern Planter*, a proposition to hold another Agricultural Convention at Richmond, on the 20th of this month. We venture to propose, respectfully, that when they meet to consider how they can best redeem her agriculture from the depressed and wretched condition in which it is said to exist, throughout the State, they appoint *two committees*, with instructions to consider and report—

1. The best means of securing, as near as possible, to the plough, a market for the products of the plough: and,

2. A memorial to the Legislature to establish a *Bureau of statistics*, with such facilities and power as will enable it, not only to report, at all times, on the products of the State, but to explore and develop its capabilities, natural and artificial, for keeping pace with her sister States in the progress of wealth and power, in a manner commensurate with her superior advantages.

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WE tender our grateful acknowledgments to Mr. Seaborn, of New York, a large paper manufacturer, with whom we have not enjoyed the pleasure of a personal acquaintance, for \$50 worth of beautiful paper, contributed by him for *the good of the cause*. We only wish he had 10,000 men employed, with profit to himself, and at such wages as would enable each man to consume a stack of wheat, a fat bullock, a south down mutton, a firkin of butter, a hogs-head of milk, a ton of potatoes, and a thousand other of the products of the farmer every day. Even if they *could afford* to drink a bottle of champagne every day (we don't exactly recommend it, being ourselves teetotallers for sanitary reasons), but how would it injure the farmer if every manufacturer and mechanic could consume dollars where they now demand cents worth of his produce? It is for *his* sake that we desire to see every industry flourish! and the loom and the anvil draw prosperously and close around the plough and the harrow.

## ON THE POWER AND USE OF NEW ENGLAND OXEN.

SOME jokes have passed between us and a friend of ours, about the weight hauled by Worcester County oxen, on their trials in Salem Street, Worcester, at their annual cattle shows—some of which we have had the great satisfaction to witness.

We applied to the excellent secretary, Mr. Lincoln, for exact information, and his answer shows, as in all such cases, how these New England men "do up" everything they put their hand to.

He sent us a diagram, very neatly done by an engineer, showing the exact inclination of the hill, from start to pole.

We made, at the same time, some other inquiries, to all of which, Mr. Lincoln replies:—

"The weight of the load is 4000 lbs., including the cart; it was formerly 5000 lbs., but it was thought to be too heavy for the smaller cattle,\* and that the training of the cattle was as well exhibited by the management of a lighter load, the weight was therefore reduced to 4000 lbs., at which it has remained for several years.

"The usual calculation for the work of a yoke of oxen, in ploughing sward-land, is one acre per day—many of our oxen do more. This work, which is done in the spring of the year, is usually before the cattle are turned out to pasture, which, with us, is not usually earlier than the 20th May. Their food is commonly dry hay, without grain; but some of our best farmers give their oxen about two quarts of corn cob meal per day, but few, however, do this. The work by oxen through the summer and autumn is usually on grass alone. Our work on our farms is almost wholly done by oxen, and will, doubtless, so continue. On almost every farm a horse is kept, to convey the family to church, occasionally the children to school, and, on the road, to convey the butter, cheese, and other notions to market, but is not much used on the farm, except with the horse-hoe and cultivator.

"Respectfully yours,

"JOHN W. LINCOLN."

How often, when a boy, alas! long time ago! in Calvert County, have we seen three span of oxen hauling one light hogshead of tobacco, to the warehouse, in old Huntingtown, to be inspected by "*Inspector Jimmy Skinner*," (as honest a man as ever trod shoe leather,) the planter's man taking a whole day to do, with three yoke, what a New England man would do with one in three hours. Ah! how precious time and force become, where men have a market at hand, and every one feels that minutes are but the "golden sands of time!" Thus everything inculcates diversity of employment and concentration of population. "*Two men can lift a log, that one can neither lift nor roll.*"

*Malt v. Barley.*—Your correspondent, "P.," says, "Malt for feeding purposes has been proved by abundant experiments to be of no value." "W." asks for information. I fattened three pigs, one on barley-meal, one on malt, and one on a mixture of from one-sixth to one-fourth of malt to barley-meal; in each case the meal was mixed with water for some days before being used. I did not keep any account of it, nor was I very particular, but I saw enough to satisfy me that the barley-meal by itself fattened the pig sooner and better than the malt by itself, but that both of them separately were very inferior to a mixture of the two. Malt is at present at too high a price for me to try experiments with, but "W." can try it.—A. K.

\* They have sometimes hauled two carts up the hill, one hitched to the other. The practice at Worcester is to turn round and back up the same load.



## REPORT OF EXPERIMENTS IN DEEP PLOUGHING.

BY MR. SINCLAIR SUTHERLAND, DALMORE FARM, ROSS-SHIRE.

[Premium, the Gold Medal.]

THIS subject of deep ploughing was, as far as we know, first and most emphatically brought into general notice in this country, by an able pamphlet, written by a plain, clear-headed, able man—THOMAS MOORE, of the Friends' Society, of Montgomery County, Maryland. It deserves to be re-published, although the seed it scattered have been spread by the force of types, and have taken root far and wide. His practice, after all, is to be pursued with some discrimination. To the American farmer, so deficient usually in capital and force, the expense it involves presents some difficulty; while some judicious farmers say it is not to be recommended indiscriminately for all kinds of land.

What the author of this prize essay says about its tendency to *compact light land*, is well worthy of notice.

If any of our readers object to *prize essays like this*, because they are founded on English observation, research, and experience, will they please let us know?

In the autumn of 1844, the reporter being strongly impressed with the advantages of deep cultivation on land naturally dry, or that had been thoroughly dried by drainage, resolved to subject a field of 45 imperial acres, on which green crops were to be grown the following season, to the operation: but as the reporter had not himself tested the matter, and as he did not know that ever it had been tested, on a soil and subsoil similar to this field, it was thought imprudent to order new ploughs. However, five common ploughs were sent to the smithy; three of these were made fit for casting a larger furrow than was previously required of them, and the other two had the mould-boards *drawn in*. The strongest of the *wide-set* ploughs was put to work with three horses, reaching a depth of 10 inches. The other ploughs wrought in pairs, the wide-set ploughs going first, turning a furrow of 6 inches deep, followed by the close-set ploughs, which penetrated a further depth of 6 inches. In this way the field was ploughed in the autumn of 1844.

The field had never before been ploughed to a greater depth than 7 inches, and consequently the subsoil was found in every place *very hard*. The land had previously been wrought in a regular rotation, and was in good condition—yielding fair, but not large crops—always failing with continued dry weather; indeed, as turnip, barley, and grass land, this was its only fault. It contains little or no *alumina* (clay), consequently has not power to retain sufficient moisture for the nourishment of plants, when rain is long withheld.

In the spring of 1845, 6 imperial acres were sown with beans, in drills 26 inches apart—a liberal dressing of rich manure, as well as a sprinkling of guano, having been applied. The result was straw five feet long, and 35 quarters of most excellent quality of beans.

Sixteen acres were planted with potatoes of different varieties, in drills 28 inches apart, a good allowance of manure having been afforded. The produce was not measured, but in almost every instance the crop was very satisfactory.

In due season the remaining 22 acres were prepared for Swedish turnip. The land being thoroughly cleaned, about 20 tons of manure from feeding stock, and 2 cwt. of guano, were applied to the imperial acre. The result was 24 tons (240,000 pounds) per acre on the average, exclusive of tops or tails.

These results were so entirely satisfactory, that the benefit on such soil of deep cultivation could not be doubted. To obtain almost 6 quarters per imperial acre of beans, from land that until now no one ever thought of trying

beans upon, and a greatly increased return of potatoes and of turnips, being at least a sixth in each case, were positive proofs of the benefits arising from deep cultivation, at least as far as green crops were concerned. It now remained to be seen what the succeeding corn crop would be.

It may be necessary to describe in detail the management of the land after the crops were removed.

In March, 1846, the whole field was ploughed 7 inches deep, and in the following month sown with common barley. The produce was on the average 6 quarters to the imperial acre, of first-rate quality of grain, being at least 1 quarter per acre more than ever the same land grew before in one season, with proportionate increase of straw.

As there was now a certainty of the profitableness of deep cultivation on this farm, trench-ploughs were ordered of the Messrs. Scouler & Co.; and your reporter resolved to conduct comparative experiments, and to report the results.

It will be proper to describe the nature of the land now about to be acted upon—and every remark which applies to it, applies with equal truth to the land already reported; indeed, both are equal divisions of exactly the same sheet of land, each division being 45 acres.

The land lies about half-a-mile from the sea, and from 40 to 50 feet above its level—is of a sandy loam, with, in every place, an abundant admixture of stones—the subsoil being sand, or sandy gravel.

The soil over about 30 acres is from 12 to 18 inches deep; 10 acres not exceeding 9 inches, and the remaining 5 acres not more than 6 inches deep—these last consisting of the highest points of the field. The entire field is naturally perfectly dry; indeed, water is never seen on its surface, except with a sudden thaw after hard frost.

In the autumn of 1846, 6 acres were marked off in the most equal part of the field, in *three* divisions. Two acres were, with 2 horses, ploughed to the usual depth of 7 inches. The other 4 acres were trench-ploughed, with 4 horses, to the depth of 14 inches. The soil below the usually cultivated depth was very solid, parting from the bottom as if *torn asunder*; but there was no pan.

In the spring of 1847 this piece of land was well harrowed, and the weeds which were brought to the surface were carefully hand-picked; and later in the season the land was cross-ploughed, well harrowed, and thoroughly cleaned. Two acres of the 4 which were trench-ploughed, had 30 bolls of lime, of 40 gallons to the boll, applied in a hot powdery state, and immediately afterwards harrowed in.

This piece of land being intended for Swedish turnips, drills were opened 28 inches wide, and 20 tons of most excellent manure, from stock fed largely on artificial food, as well as farm produce, applied, along with 2 cwt. of Peruvian guano, to the imperial acre. The manure was immediately spread, and covered by the plough, followed by the sowing-machine, depositing about 2½ lbs. of seed, of Skirving's purple top, to the acre. This was on the 2d and 3d of June.

The weather being exceedingly favourable, the plants very soon made their appearance, and finer braird was never seen, there not being on any part a foot of a blank. The braird on the 2 acres to which lime had been applied, and which were not sown until the afternoon of the 3d, was out before that of the deep-ploughed land sown the same *morning*, and also before that of the shallow-ploughed land sown the *previous day*. This no doubt arose from the lime disengaging gases from the manures and soil, which warmed the latter, and afforded early nourishment to the *embryo* plant.

Early in July, the 6 acres were hoed 10 inches apart, and after that period

the crop on the limed land did not show greater luxuriance than the crop on the deep-ploughed land, to which no lime had been applied; both, however, were more bulky than that of the shallow-ploughed land, and this continued throughout. In due season a second hoeing was given, and in the autumn the whole were drilled up, to preserve them from the winter's frost.

On the 1st of April, 1848, the crop was cast out by the ploughs, an imperial acre of each of the three differently treated portions being measured and staked off. The tops and tails being removed from the bulbs, the latter were filled into the carts, and the entire quantity weighed in loads on a steelyard, with the following results:—

Treatment.	Produce per imperial acre.				Excess produce per imperial acre.			
	Tons.	cwt.	qrs.	lbs.	Tons.	cwt.	qrs.	lbs.
Trench-ploughed and limed	27	18	2	0	6	6	1	7
Trench-ploughed	26	6	0	14	4	13	3	21
Shallow-ploughed	21	12	0	21				

The land was harrowed quite level, the *shaws* being left on the surface to be ploughed in as a manure; which, on soil of this description, very deficient in vegetable matter, is found good practice.

The six acres were ploughed 7 inches deep, and on the 1st of May were sown by the same hand, with 3 bushels and 1 peck of common barley to the imperial acre—the land being immediately *thoroughly harrowed and rolled*.

The braird came away freely, looking remarkably healthy, and equal all over the three portions; and up to the time of cutting there was not any difference observable, except that, when coming to maturity, the crop on the shallow-cultivated land had a *greater lean-over*, showing that it was less able to support the crop than the deeper-cultivated land.

The whole being equally ripe, was cut on the 8th of September; and highly favourable weather succeeding, the corn and straw were in the very best possible condition for leading on the 18th, when the entire quantity grown upon 3 acres—an acre of each kind—was weighed in loads as brought from the field, and at once put into the loft to be thrashed, each differently treated portion being kept distinctly separate.

The object of weighing the crop as brought from the field was to save labour, as it only remained to deduct the *weight* of the dressed barley from the *gross weight*, and the balance, of course, was the weight of the straw and chaff.

On the 20th September the whole was thrashed, dressed, and measured, and the following results obtained—*per imperial acre*:—

TREATMENT	Produce of Grain.			Produce of Straw.		Weight per bushel	Excess produce of Grain.			Excess produce of Straw.		Light Barley.
	qrs.	bsh.	pk.	sts.	lbs.		qr.	bsh.	pk.	sts.	lbs.	
Trench-ploughed and limed	7	0	2	260	0	57½	1	0	0	5	9	2
Trench-ploughed	6	7	2	261	8	57½	0	7	0	7	3	2
Ploughed	6	0	2	254	5	57½	—	—	—	—	—	2

The reporter is decidedly of opinion that, had the season been hot and dry, instead of, as it was, cool and moist, there would have been a greater difference in favour of the trench-ploughed land; this is asserted from the experience of former years, in which both green and corn crops withstood continued drought after deep ploughing, when formerly, with dry weather, a failure was inevitable.

The expense of trench-ploughing old cultivated land may be set down at a



half more than common ploughing; where there are many large stones interrupting the progress of the plough, and also a hard subsoil, the expense will be *more* than a half. Let no man think of trench-ploughing his land without giving his horses plenty of the best food.

The horses are yoked two and two abreast, the foremost two drawing by a strong chain from the muzzle of the plough. A boy accompanies each plough, attending the front horses, managing them at the turnings, and placing a *mark* wherever a large stone is found, for the purpose of the latter being taken out by the men who follow, so that there may be no future interruption to deep cultivation.

The writer's experience only refers to trench-ploughing before green crop; and the land in spring is *always harrowed* before cross-ploughing. This serves two good purposes; the weeds which may be brought to the surface are removed, and the horses have a *firmer footing* for cross-ploughing.

The rotation practiced on this farm is the seven-course, viz: 1. Beans, tares, potatoes, and swedes. 2. Wheat or barley. 3. Turnip, partly eaten off. 4. Barley, with grass seeds. 5. Hay, or pasture. 6. Pasture. 7. Oats. So that the land will continue to be trench-ploughed *twice* every seven years.

The practical conclusions to be drawn from these experiments are:—

*First.* That deep ploughing increases the produce of both green and grain crops: and this the reporter states not only from what these experiments point to, but from having grown green crops, after trench-ploughing, on 180 acres, and grain crops on 135 acres of land, with uniform success.

*Second.* That trench-ploughing tends to *firm* or *consolidate* light land. This is stated from the fact, that on walking across the stubble-field the writer felt the shallow-ploughed land more loose than the trench-ploughed land; and this is also supported by the fact already stated, viz: that the crop on the shallow-ploughed land had a greater lean-over than the other, while the quantity of grain was less; showing that, however forced, it is impossible on weak light land to grow very large crops without deep cultivation, as the mechanical texture of the surface cannot support beyond a certain quantity.

*Third.* Deep ploughing will always require to be *well harrowed and rolled*, as it is only by these means that a *uniform compactness* can be attained.

#### RANDALL'S BOOK ON SHEEP HUSBANDRY.

*Opinion of MARK R. COCKRILL, ESQ., of that work, and of "The Plough, the Loom, and the Anvil"—The gad-fly of Sheep—Error as to its habits, in an important particular of its natural history, corrected.*

Mr. Cockrill is admitted to be eminently well-qualified to pronounce judgment, on any practical subject, to which he directs his attention.

Nashville, December 30th, 1849.

DEAR SIR:—I have just returned from Miss., and find your valuable letters. I am gratified to have it in my power to say, that I have carefully examined H. S. Randall's work on "*Sheep Husbandry*." I am fully prepared to say, it is the *very best work* that I have ever been able to get hold of, either European or American. I must say, with my long experience and close application to this important subject, I find no difference in opinion between him and myself, excepting as to the gad or sheep-fly. He, and all other writers that I have seen, state that that fly deposits an *egg* upon the sheep's nose. They have not looked closely to this point, for it deposits its young *alive*, and ready to run instantly up the cavities of the sheep's head.

Those who wish to know the truth have only to catch this fly and dissect it, and they will find hundreds of young alive, and ready to run—many in

one fly. Many diseases originate from this fly. I may at some future day give, when I have more leisure, a full history of this particular evil. In this country the dogs, and this abominable insect, are almost the only drawbacks against this important and beautiful pursuit. I have recommended Col. Randall's book to every person that applies to me for information upon this subject. Every person in the country, that has a flock, should read and study this work.

I have scribbled this off in the night, and cannot see. Please pardon me, as I cannot write more.

Yours, with great esteem,

MARK R. COCKRILL.

P. S.—I have not had time to select any samples, but send two to give some idea of my wool—eight months' growth. *Every man in the United States ought to read "The Plough, the Loom, and the Anvil."*

## EDITORIAL CORRESPONDENCE.

*The run of the mail for a day or two.*

Birdsville, P. O., Burke County, Ga., 30th December, 1849.

My Dear Sir:—According to account rendered, I inclose you my arrears for subscription to "*The Plough, the Loom, and the Anvil*," from 1848 to June 1850, inclusive, six dollars (\$6), also five dollars (\$5), for two other subscribers, with the hope that I shall make up a number before the lapse of another year.

Please send back numbers to the following gentlemen, ——— and ——— who is one of my nearest neighbours, and one of the wealthiest planters in the county, and has represented us many years in our State legislature.

Permit me, my dear sir, to congratulate you upon the return of another year, and with an earnest prayer to Heaven, that your life may still be spared to see the great interest which you have advocated so long and so truthfully as well as faithfully, regarded with that merit which it deserves in the national councils of our country. May you receive also, while living, if not in full, at least payment in part, of the debt of gratitude which the agriculturists of America owe you, but which perhaps you may never get, until posterity foots the balance sheet.

I have just read with pleasure, as well as pride, that portion of President Taylor's message in relation to the claims of the agriculturist upon the consideration of all great and good men. I hope it may be the omen of brighter and happier days upon the industrial classes of our country. Shall we have another congress of the representatives of a great and free people without action upon this subject.

May not he who has laboured at one cause without ceasing, for more than thirty years, in bright and fortunate, as well as in adverse and gloomy days, with all his abilities, such as God has given him, be excused for thus recording (if only for the gratification of those nearest to him, who are to come after him) such evidence of generous and honourable sympathy and kind feeling, as is evinced in the foregoing? What reader would withhold the privilege from one who, now on the wrong side of sixty, finds himself necessitated to labour harder than ever to keep afloat. *Such is our case.*

## CORN, COB, AND SHUCK CRUSHERS.

To the attention of implement manufacturers—who, as a body, deserve to be regarded as eminent benefactors of agriculture—we respectfully recommend the following: We are not aware that any one has, heretofore, called for a crusher, that would grind up the *shuck*, or covering of the ear, along with the grain and the cob. That such a thing would be very desirable, there can be no doubt, for we believe the shuck to be nutritious, to a degree not generally known. Governor Sprigg, of Maryland, reserves them as a favour to his *milch cows*. Strange to say, we have heard sensible farmers maintain that they are the better, as indicated by their being eaten more heartily, when they are *slightly moulded*. Is it that, like malting, it amounts to a sort of fermentation?

Agricultural implement makers are invited to a correspondence on the subject of agricultural machinery, generally.

*Gallatin, Hends Co., Miss.*

You very often have advertised farming utensils. I think the notice of them is too indefinite, as it regards what I have been on the lookout for, or the kind that I want, have not found a place in your list.

I want a *corn crusher*; one that would grind cob, corn, and shuck, into food for horses and oxen. I have seen two kinds, but neither embraces the mixing the shuck. One of them has not sufficient stamina to know how the other may operate; trial has to demonstrate. As a special favour, when you write, please give me any information you may have on the subject. I flatter myself that you will take a pleasure in enabling him to carry out anything like economy, especially in these hard times for the South, for we have come nearer a failure in corn and cotton than we ever have.

Yours, truly, H. W. S.

JOHN S. SKINNER, Esq.

#### "ELEMENTS OF AGRICULTURE."

RECOMMENDED—WHERE IT MUST GO—FOR USE IN THE COMMON SCHOOLS OF THE COUNTRY.

*Newton, Sussex County, N. J., January 17, 1850.*

J. S. SKINNER, Esq.—*Dear Sir:*—Enclosed please find five dollars (\$5), for which I wish to obtain "The Plough, the Loom, and the Anvil," Vol. I. and Vol. II., so far as published, and the remaining numbers for the current year when published.

Accept my thanks for your kindness in forwarding the "Elements of Agriculture," in September last. I have a high opinion of it, and, in a report made Jan. 1st, inst., to our County Educational Society, recommended its introduction into the common schools.\* Wishing you all prosperity in your efforts to ameliorate the condition of the farmer, I am most respectfully,

Yours, &c. CHARLES M. HALSTED.

*Post Office, Chillicothe, Ross Co., Ohio, January 16, 1850.*

SIR:—"The Plough, the Loom, and the Anvil," addressed through this office to Gen. J—— W——, he refuses. You will therefore take notice, all numbers sent to his address in future will be *sold for postage!*

Respectfully yours, WM. C. DOUGHERTY, Asst. P. M.

J. S. SKINNER, Esq.,

No. 79 Walnut Street, Philadelphia, Penn.

This reminds us of an anecdote, told by our friend Whittlesey, that an unfortunate merchant, who had been compelled to "take the benefit," was travelling in the west to sell goods on commission. He happened to display them to an old creditor, who produced his own note, and offered to take goods in payment. "Oh no," said the merchant, "they are not mine." "Very well, if you don't pay your note, I will put it in the fire and burn it up before your face." "Oh, surely you would not so disgrace me?" "Yes, I surely

\* Three gentlemen—one in South Carolina, one in New York (the Hon. C. E. Clarke), and one in Delaware—ordered, the first 50; the second 50; and the last 75 copies for gratuitous distribution.



will burn your note, if you don't pay it." The merchant was so deeply distressed at the idea of such an indignity, that he *actually contrived to take up his note!* Now, we are really afflicted at the idea of *The Plough, the Loom, and the Anvil*, on which we bestow so much of our poor brain-labour, (and for which we pay, every month, "cash as we go,") being *sold for postage!* Why, it often happens that, before we can get back numbers reprinted, to make up an entire volume, wanted at the instant, we would give three prices for a single number. Won't some friend in the neighbourhood of Chillicothe save us from the threatened indignity? However, we will stop the paper on this, the first notice we have received, though seven numbers have been sent. Assuredly we don't want to force the work on any one. All we ask is, punctuality from those who do take it, and the kind assistance of those who wish to further the progress of sound opinions, on the true sources of agricultural prosperity, for every country. But here follows "a horse of another colour:"—

*Cove Forge, January 13th, 1850.*

DEAR SIR:—The subscription of Schmucker & Wampler to "The Plough, the Loom, and the Anvil," ended, I believe, a month or two ago. You will please give me credit for another year's subscription, or rather, mark me down as a "life member," and direct hereafter to

JOHN G. SCHMUCKER,  
*Williamsburg, Blair county, Pa.*

*January 15.*

After writing the above, I concluded, as you suggest, to endeavour to get others to unite in subscribing with me. It was my first attempt at soliciting subscription, and was a tolerably successful one. I find that all "The Plough, the Loom, and the Anvil" required to secure it a general circulation among the iron manufacturers of our State is, that they should *see it, and understand the character of the work.* (Here follow five names.)

The names of the men I send you are among the most intelligent and influential in our county, and will exert themselves to extend the circulation of your work.

Respectfully, yours,

JOHN G. SCHMUCKER.

But here, good as all is (except the *slow* notice from Chillicothe), we reserve, as in a lady's letter, the best for the P. S.

*Port Gibson, Miss., January 3d, 1850.*

JNO. S. SKINNER, ESQ. Dear Sir:—Enclosed you will find \$15, which please appropriate as follows:—

Here follow the names.

The above are all new subscribers, and their addresses are all to this Post Office.

The other \$5 enclosed, was handed me by "Dr. J. P. P." of our town.

I doubt not that I should have been able to send at present a longer list of subscribers, had I not been absent for the past two weeks on a visit to Lake St. Joseph, La.; whither I went to enjoy the delectable sport of *duck hunting*, of which we Eastern shore men are proverbially fond. One who has not visited the interior waters of Louisiana can form no idea of the immense quantities of water-fowl which resort thither in the winter season. A seat in a skiff upon the placid waters of the Lake, with a genial atmosphere, the reverse of that which freezes the nose and feet of the Northern sportsmen, and with ducks of almost every known, and of some unknown varieties, filling the air with the noise of their rapid flight, form *material* enough, one would think, to gratify the most ambitious sportsman; but to complete the picture

of hunting in Tensas (the parish in which this Lake is situated), you must add the droves of lordly deer, and troops of wild turkeys, which roam her forests and find shelter in her dense canebrakes, and also the immense droves of wild geese which fill her corn and pea-fields. From all these we exacted ample tribute, and returned, after an incessant hunt of ten days, to our homes and business, with renovated strength and spirits, and pleasant recollections of our Christmas hunt.

But "*revenons a nos moutons*," as our French friends say, I am happy to say that the principles so ably advocated by "The Plough, the Loom, and the Anvil," are rapidly growing in public favour here, and that *interest* will soon ripen into *action*. A great change in public sentiment has been produced, and our planters are beginning to understand the *true* policy of the South. We have recently had established here, by an industrious and skillful Ohio mechanic, a plough and wagon factory. His *immediate success*, and the superiority of his work over that heretofore sent here by irresponsible *northern* men, have had a very favourable influence.

Another individual from the same State will, probably, soon open an extensive carriage manufactory here, and we shall doubtless, soon have *tanneries*, manufactories of coarse shoes, &c., and a *plan is now maturing* for the establishment of an extensive cotton and wool factory. All these we *will* have, and their success cannot be doubted.

No speedy change can be effected in Agricultural pursuits here, indeed, I fear that the present *temporary* high price of cotton will greatly retard it, but the change *will* come at last. When manufactories here shall *draw around them a consuming population*, much of our exhausted land, now yielding but scanty crops of cotton, will, under a different system of culture, yield food, in abundance. He who has noted the increased value of lands formerly worn out by tobacco culture, but now enriched by the establishment of *factories* in *Maryland*, can form an idea of what will occur here, where like causes must produce like results.

Sincerely wishing your continued health and increasing prosperity, I remain,  
Truly yours, WM. H. JACOBS.

—, Georgia, December 25th, 1849.

DEAR SIR:—Enclosed is three dollars for my subscription for "The Plough, Loom, and Anvil." I have not seen lately my friends who were so kind twelve months since to join me in a subscription to your periodical. I therefore send my own, and, if I can, I shall try and send you a club subscription before long. I advise every man of respectability to take it. Though many at the South object to and "abhor" your doctrines, I am one who has investigated for myself and cast off prejudice, and agree with you. Therefore, success to your doctrines, and especially to your personal success.

Very respectfully,

S. R.

☞ The reader will please look at the whereabouts of the above. We get many such. Why do not those who "abhor" our "doctrines" refute them, if they can? Have we denied place or hearing to any one? So we too, are, like those who abhor our doctrines, in favour of "free trade," but not that free trade which means subserviency to "the policy of British merchants"—that free trade that, before it can be enjoyed on equal terms, requires the American labourer, at all the pursuits which make a market for the farmer and planter, to be reduced to the wages and degraded condition of the labour of European governments which we every day denounce as tyrannical and oppressive. Why boast of our Republican government—what is its use—if it does not elevate the physical and moral condition of its industry above that of the serf of Russia, the fellah of Egypt, and the starving labourer of Ireland?